THE

# GEOGRAPHICAL MAGAZINE.

*SEPTEMBER*, 1876.

## CENSUS OF THE BRITISH ISLES, 1871. BIRTHPLACES AND MIGRATION.*

### LAWS OF MIGRATION: COUNTIES AND GENERAL.

IN attempting to elucidate the laws which govern migration it is desirable that we should be in possession of the whole of the facts which bear upon the question. We ought to know, not only how many natives of each county there reside beyond its limits, in other parts of the United Kingdom, but also how many have emigrated to foreign lands. Unfortunately we know neither. We are not even able to trace the natives of a particular English county to Scotland or Ireland, and still less throughout the world. A careful estimate, based upon the returns received by the Census Commissioners and other authorities, shows that the number of natives of the British Islands was nearly thirty-six millions, distributed as follows (about 1871):

| Residing in | Number. | Per Cent. |
|---|---|---|
| County of their Birth ... ... | 24,152,853 | 67·8 |
| Other parts of British Isles ... | 7,217,769 | 20·3 |
| British Colonies ... ... | 1,472,000 | 4·1 |
| United States ... ... ... | 2,626,241 | 7·3 |
| Other parts ... ... ... | 150,000 | 0·5 |
| | 35,618,863† | 100·0 |

This table shows very conclusively that migration within the limits of the United Kingdom is going on far more extensively than emigration to other parts of the world. The latter, however, takes place, nevertheless, on so large a scale as to be capable of obscuring, in many cases, any law which may govern migration within the British Islands. At the same time we must bear in mind that there is no county throughout the United Kingdom which does not contribute its share towards emigration, and the errors which might arise from our not knowing its extent for each county are thus reduced very considerably. It tells, however, in particular instances, and to some of these we shall refer in the following pages.

As might naturally be supposed, the laws of migration applicable to towns are applicable, in a large measure, and taking into account the different circumstances of the case, to counties likewise. In the case of these latter we deal with larger populations, and many exceptional circumstances, resulting from local causes, are eliminated. The Floating Element of the population (which is a prominent feature sometimes in the case of towns) has only little weight when we come to consider entire counties, and the garrison of Portsmouth, which materially affects the character of the population of that town, hardly makes itself felt in the county as a whole. In Kildare, however, with its standing camp at the Curragh, this Floating Element exercises a decisive influence.

2.—*Sex and Age.*—Before entering upon a classification of the counties similar to that of the towns, we propose to consider migration with reference to sex and age. Amongst the natives of England and Wales enumerated throughout the British Islands, there are 106 females to every 100 males, amongst the natives of Scotland 110, and amongst those of Ireland 105. The large preponderance of the female sex amongst the Scotch distinctly points to an extensive emigration to foreign countries, and those who have experienced the ubiquity of the Scot in the military and civil services of his country, in commercial and all other kinds of pursuits, will not be surprised at this fact. The following tabular statement exhibits the influence of migration upon the proportion between the sexes:—

| | Number of Females to every 100 Males amongst Natives of | | |
|---|---|---|---|
| | England and Wales. | Scotland. | Ireland. |
| Residing in County where born ... | 103 | 111 | 105 |
| Residing beyond County in which born, but not beyond limits of Kingdom ... ... ... ... | 110 | 112 | 113 |
| Residing in other parts of the British Isles ... ... ... | 31 | 87 | 105 |

These figures show very clearly that females are more migratory than males within the kingdom of their birth, but that the males more frequently venture beyond. In other words, the number of females who leave the county in which they were born, in order to seek employment in some other county of the same kingdom, is larger than that of the males, but there are more males who leave the kingdom of their birth for one of the sister kingdoms. Ireland is the only exception to this rule, for amongst the natives of Ireland residing in Great Britain, the number of females is as large as it is amongst the Local Element of the population of Ireland, and very nearly as large as amongst the natives of Ireland collectively. It appears to be a common occurrence for families to leave Ireland for the sister kingdoms, whilst the emigrants from England or Scotland leave without "incumbrances." At all events the elements which make up families will be found to exist amongst the Irish emigrants, and this fact, amongst others, explains their

* Several misprints having occurred in the previous portions of this Paper, a reprint of the whole of it will be added as a supplement to the next number of the *Geographical Magazine*.

† Of these 35,618,863, about 23,212,000 are English and Welsh, 3,782,000 Scotch, and 8,471,000 Irish.

slow assimilation with the people amongst whom they settle.

Equally instructive is a consideration of the ages of the migrants or emigrants as compared with the ages of those who remain at home.

Amongst the Local Element of the population of England and Wales the number of males less than 20 years of age is equal to 54 per cent. of all males; in Scotland it is 59 per cent. The proportion amongst females is 52 and 56 per cent. respectively. If we pass beyond the limits of the counties, we find that amongst the natives of England who do not reside within the counties of their birth, although within the limits of England, this proportion is 28 per cent. for males and 25 per cent for females. The corresponding figures for Scotland are 31 and 28 per cent. Thus far the natives of the two kingdoms exhibit analogous proportions, although the juvenile element is more numerously represented in Scotland than it is in England, another result of emigration to foreign parts. But when we trace the natives of England who reside in Scotland, we find that 34 per cent. of the males and 35 per cent. of the females are under 20 years of age, these proportions, in the case of natives of Scotland residing in England, being 20 and 22 per cent. The larger number of young persons amongst natives of England residing in Scotland may be due to the fact of many children of Scotch parentage, born in England, being sent to Scotch schools. As to the natives of Ireland residing in Great Britain, there are amongst them only 14 per cent. who are under 20 years of age. This consideration of sex and ages shows that more than two-thirds of the migrants are adults, 20 years of age and upwards; and that females migrate more frequently than men. It likewise proves that entire families leave the county of their birth only under exceptionable circumstances, for if they did so largely, the juvenile element of the population would be as numerous amongst persons residing outside the counties in which they were born as it is within them.

3.—We have fully explained the manner in which towns recruit their population. The same process goes on in connection with counties, whose attractive power decreases likewise at an inverse ratio to the distance, modified by facilities of access and other causes, in the same manner as in the case of towns (p. 204, first column). We propose to give the details for the county of Warwickshire in illustration of this law. They are as follows:—

| | Natives of | Number. | Percentage of Population of Warwickshire. | Percentage of Population of Counties named in first column. |
|---|---|---|---|---|
| | Warwickshire ... | 446,659 | 70·4 | 70·4 |
| First Zone. | Worcester | 27,150 | 4·3 | 8·0 |
| | Stafford ... | 33,575 | 5·3 | 3·9 |
| | Derby ... | 3,643 | ·6 | 1·0 |
| | Leicester . | 10,113 | 1·6 | 3·8 |
| | Northmpn. | 7,693 | 1·2 | 3·1 |
| | Oxford ... | 7,048 | 1·1 | 3·9 |
| | Gloucester | 12,718 | 2·0 | 2·4 |
| | Total | 101,940 | 16·1 | 3·6 |
| | 2nd Zone of Counties* | 17,934 | 2·8 | 1·4 |
| | Rest of Eng. & Wales | 49,101 | 7·7 | ·2 |
| | Ireland ... ... | 11,578 | 1·8 | ·2 |
| | Scotland ... ... | 2,614 | ·4 | ·8 |
| | Other parts ... ... | 4,263 | ·8 | — |
| | | 634,089 | 100·0 | — |

* This zone includes Hereford ·6 (3·1), Salop 1·2 (2·9), Notts, ·4 (·8), Rutland ·01 (1·5), Bedford ·1 (·6), Bucks ·3 (1·0), and Berks ·2 (·7).

4.—We have already stated that emigration is always attended by a counter-current of immigration. In some cases this counter-current is strong, in others it is weak, but in every instance does it exist; and there is no county in England the Local, county-born Element in which exceeds 91·2 per cent., and none in the United Kingdom in which it exceeds 97·6 per cent.

In illustration of these contrary currents, we will consider a Scotch county, as far as possible centrally situated, where both emigration and immigration, outflow and inflow, are far beyond the average. We refer to the county of Peebles, which is contiguous to Lanarkshire (Glasgow) and Edinburgh, but yet possesses sufficient attractions of its own to cause most of the vacancies arising from the emigration of her unfaithful sons to be filled up almost immediately. The total number of natives of Peebles residing throughout Scotland is 13,752—we possess no information with respect to those residing in England or Ireland—and of these 6371 reside in the county of their birth, and 7383 in other parts of Scotland. But as Peebles has a population of 12,218 souls, no less than 5847 persons residing in that county must be natives of other parts of the world. The table which follows shows where the 7382 emigrants have gone to, and whence the 5847 immigrants came from.

EMIGRATION.

| | To | Number. | Per Cent. | Per Cent. of Population of Counties to which gone. |
|---|---|---|---|---|
| First Zone. | Selkirk ... ... | 600 | 8·1 | 3·1 |
| | Edinburgh ... | 3807 | 51·6 | 1·2 |
| | Lanark ... ... | 1412 | 19·1 | 0·2 |
| | Roxburgh .. ... | 198 | 2·7 | 0·4 |
| | Dumfries ... ... | 208 | 2·8 | 0·3 |
| | Total ... ... | 6225 | — 84·3 | — 0·5 |
| | Second Zone* ... ... | 562 | 7·6 | 0·1 |
| | Third Zone† ... ... | 435 | 5·9 | 0·05 |
| | Rest of Scotland ... | 161 | 2·2 | 0·02 |
| | England and Wales ... | ? | — | — |
| | Ireland ... ... ... | ? | — | — |
| | Other parts... ... ... | ? | — | — |
| | | 7383 | 100·0 | — |

IMMIGRATION.

| | From | Number. | Per Cent. | Per Cent. of Population of Counties of Birth. |
|---|---|---|---|---|
| First Zone. | Selkirk ... ... | 495 | 8·4 | 2·5 |
| | Edinburgh ... | 1371 | 23·4 | 0·4 |
| | Lanark ... ... | 1589 | 27·2 | 0·2 |
| | Roxburgh.. ... | 440 | 7·6 | 0·9 |
| | Dumfries ... ... | 272 | 4·6 | 0·4 |
| | Total .. ... | 4167 | — 71·2 | — 0·3 |
| | Second Zone* ... ... | 589 | 10·1 | 0·1 |
| | Third Zone† ... ... | 317 | 5·5 | 0·04 |
| | Rest of Scotland .. | 261 | 4·5 | 0·03 |
| | England and Wales ... | 206 | 3·5 | — |
| | Ireland ... ... ... | 248 | 4·2 | — |
| | Other parts... ... ... | 59 | 1·0 | — |
| | | 5847 | 100·0 | — |

It appears thus that of every hundred emigrants from Peebles, still residing in Scotland, no less than 84·3 went to the counties included in the first zone; and that these emigrants constitute 0·5 per cent. of the population of the counties to which they have gone. The foremost place must be accorded to

* The second zone includes the counties of Linlithgow, Fife, Haddington, Berwick, and Ayr.

† The third zone includes the counties of Kirkcudbright, Renfrew, Dumbarton, Stirling, Kinross, Perth, Clackmannan, and Forfar.

SHETLAND ISLANDS
ORKNEY. IS
SUTHERLAND
CAITHNESS
ROSS & CROMARTY
INVERNESS
ELGIN
BANFF
ABERDEEN
Aberdeen
Inverness
FORFAR
Montrose
Perth
Dundee
Arbroath
PERTH
Kirkcaldy
Stirling
Glasgow
Edinburgh
Hamilton
LANARK
BERWICK
Ayr
Dumfries
Carlisle
Newcastle
Tynemouth
Shields
Sunderland
Durham
Middlesbrough
CUMBERLAND
DURHAM
NORTHUMBERLAND
YORKSHIRE
Barrow
Lancaster
York
Leeds
Bradford
Halifax
Preston
Bolton
Manchester
Sheffield
Liverpool
Stockport
Macclesfield
CHESHIRE
Chester
Derby
Nottingham
Leicester
Coventry
Birmingham
Wolverhampton
STAFFORD
SALOP
Worcester
Gloucester
Oxford
Bristol
Bath
Reading
WILTS
Salisbury
HANTS
Winchester
Southampton
SOMERSET
DEVON
Exeter
DORSET
Dorchester
Plymouth
CORNWALL
Swansea
Newport
GLOUCESTER
BRECON
CARMARTHEN
PEMBROKE
CARDIGAN
RADNOR
HEREFORD
MONTGOMERY
DENBIGH
FLINT
CARNARVON
ANGLESEY
MERIONETH
BUCKS
BERKS
NOTTS
DONEGAL
Londonderry
ANTRIM
TYRONE
Belfast
FERMANAGH
ARMAGH
DOWN
SLIGO
LEITRIM
MONAGHAN
CAVAN
LOUTH
MAYO
ROSCOMMON
LONGFORD
Drogheda
WESTMEATH
MEATH
GALWAY
Galway
KING'S
Dublin
KILDARE
QUEEN'S
WICKLOW
CLARE
CARLOW
Limerick
LIMERICK
TIPPERARY
Kilkenny
WEXFORD
KERRY
CORK
Waterford
Cork
I. OF MAN
CHANNEL ISLANDS
Guernsey
FRANCE
Jersey
10°
8°
6°
4°
2°
60°
58°
56°
54°
52°
50°

Census of British Isles, 1871.

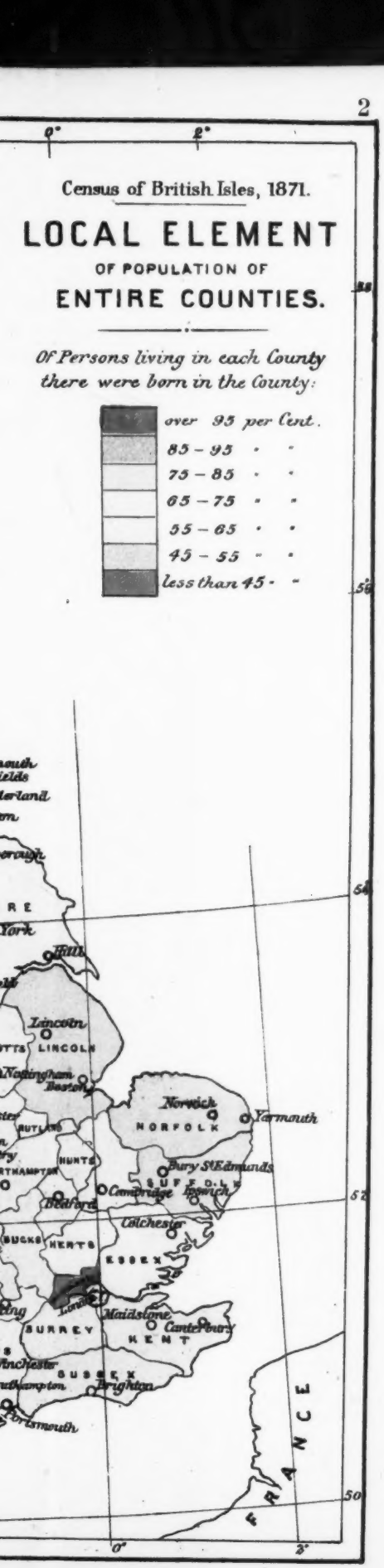
# LOCAL ELEMENT

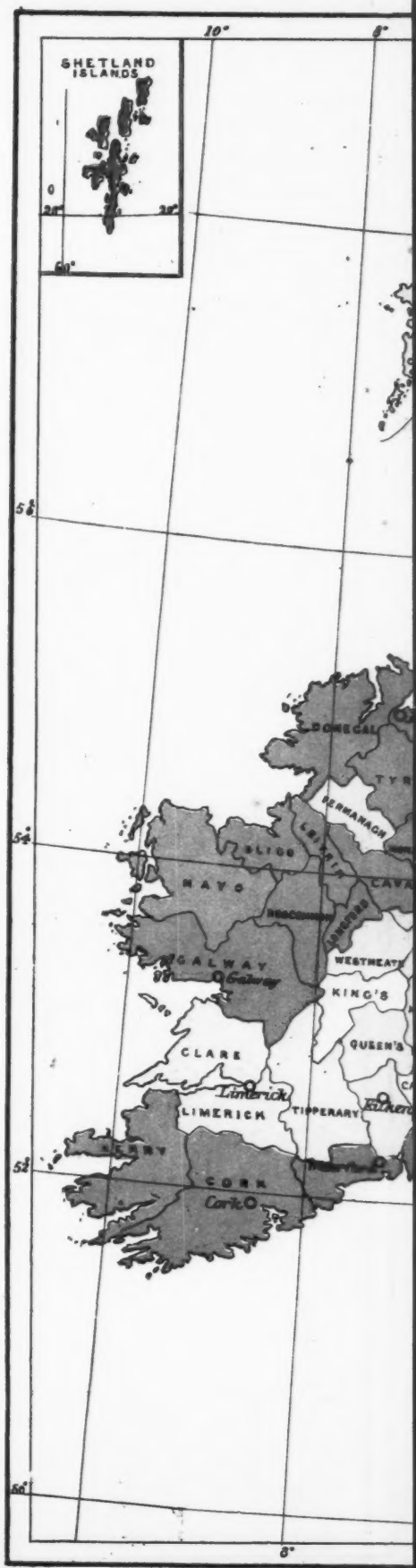
OF POPULATION OF

## ENTIRE COUNTIES.

*Of Persons living in each County there were born in the County:*

- over 95 per Cent.
- 85 – 95 " "
- 75 – 85 " "
- 65 – 75 " "
- 55 – 65 " "
- 45 – 55 " "
- less than 45 " "



Edinburgh and Lanark, as far as numbers go, though Selkirk has received more emigrants in proportion to its population than either of the others. This emigration was made up for, to a large extent, by immigration. Selkirk sent a contingent equal to 2·5 per cent. of its total population, and again stands first upon the list; but the attractions of Peebles are not as great in the eyes of the natives of Lanark and Edinburgh as are those of these two counties in the eyes of the natives of Peebles, and they find themselves outstripped by Roxburgh.

5.—*Emigration.*—We have referred repeatedly to the importance of emigration to British colonies and foreign countries as an important element when considering the subject of migration. There are no returns which supply information with respect to its extent from each county, though indirectly, by ascertaining the increase or decrease of the *natives* of each country, as distinct from its total population, we are able to obtain an approximation to the truth. When we find that the natives of Middlesex, between 1861-'71 increased at the rate of 39 per cent., those of Glamorgan at the rate of 38 per cent., and those of London, Durham, and Lancashire, even at the rate of 29 per cent., we may fairly assume that emigration from these counties has not taken place on a very extensive scale. On the other hand we find that the natives of Pembroke and Brecon have increased 1 per cent. only, and those of Cornwall, Radnor, and Anglesey 2 per cent. only, whilst the natives of most Irish counties, and of some Scotch ones, have actually decreased in numbers. This decrease, or slow increase, justifies the conclusion that emigration must have gone on from these counties at a very high rate.

The figures, however, which we obtain by a comparison of the number of natives of each county enumerated in 1861, with those enumerated in 1871, are subject to a small rectification, for no details are given with respect to persons not residing within the country of their birth. The number of natives of England residing in Scotland and Ireland* increased from 106,968 in 1861, to 138,363 in 1871, being equal to 0·2 per cent of the natives of England and Wales enumerated throughout the United Kingdom in 1861. The natives of Scotland residing beyond that kingdom increased from 186,129 to 233,571, equal to 1·5 per cent. of all natives of Scotland, whilst the Irish enumerated in Great Britain decreased from 805,717 to 774,310, the decrease being equal to 0·5 per cent. If we assume that the emigrants to the sister kingdoms were furnished at an equal rate by all counties, then the natives of the various English counties increased to the extent of 0·2 per cent. and those of Scotland of 1·6 per cent. more rapidly than appears from a comparison of the number of natives of the different counties actually enumerated in the two census years, whilst the natives of Irish counties decreased at a rate 0·5 in excess of that resulting from such comparison. We are quite aware that these emigrants are not furnished *pro rata* by each county, but being unable to distribute them amongst the counties of which they are natives, we prefer to spread them over the whole of the kingdom to ignoring them altogether. The following statement exhibits the results obtained in this manner :—

* No details as to birthplace having been given for Man and the Channel Islands, for 1861, these are naturally excluded from consideration.

*Decennial Increase or Decrease of the Natives of each County of the United Kingdom, 1861-'71.*

INCREASE.

| Per Cent. | | Per Cent. | |
|---|---|---|---|
| 39. | Middlesex. | 8. | Dorset, Denbigh. |
| 38. | Glamorgan. | 7. | Bucks, Somerset, Flint, Carnarvon. Elgin, Nairn, Peebles, Shetlands. |
| 29. | London, Lancashire, Durham. | 6. | Oxford, Suffolk, Norfolk, Devon, Salop. Haddington, Kincardine, Roxburgh. |
| 25. | Lanark. | 5. | Hunts, Hereford, Merioneth. Caithness, Berwick. |
| 24. | Surrey. | 4. | Wilts, Rutland. Inverness, Orkneys, Ross, Selkirk. |
| 20. | Stafford. | 3. | Westmoreland, Carmarthen, Cardigan, Montgomery. Wigtown, Linlithgow. |
| 18. | Warwick. | 2. | Cornwall, Radnor, Anglesey. Bute, Dumfries, Louth. |
| 17. | Dumbarton. | 1. | Pembroke, Brecon. Sutherland, Perth. |
| 16. | Forfar. | | |
| 15. | Yorkshire. | | |
| 14. | Kent, Monmouth. Edinburgh, Renfrew. | | |
| 13. | Hants, Berks, Cheshire, Northumberland. Aberdeen. | | |
| 12. | Derby, Beds. Banff. | | |
| 11. | Sussex, Essex, Worcester. Stirling. | | |
| 10. | Herts, Northampton, Cambridge, Leicester, Lincoln, Notts. Ayr, Clackmannan. | | |
| 9. | Gloucester, Cumberland. Fife, Kirkcudbright. | | |

DECREASE.

| Per Cent. | | Per Cent. | |
|---|---|---|---|
| 1. | Kinross. | 9. | Longford, Cavan. |
| 2. | Kerry. | 10. | Londonderry. |
| 3. | Argyll, Down, Mayo. | 11. | Kildare, Queen's, Westmeath, Clare, Limerick, Fermanagh. |
| 4. | Dublin, Wicklow, Armagh. | 12. | Kilkenny, Meath, Tipperary. |
| 5. | Antrim. | 16. | King's. |
| 6. | Cork, Donegal, Leitrim. | 25. | Carlow. |
| 7. | Wexford, Waterford, Monaghan, Tyrone, Sligo. | | |
| 8. | Galway, Roscommon. | | |

Our Map (No. 7) exhibits these results graphically, and we shall be pretty safe if we assume that those counties which are left blank upon the map, or are tinted yellow, orange, red, or green, furnished a number of emigrants far in excess of the average for the whole of the United Kingdom. We must bear in mind, however, that the excess of births over deaths must necessarily exercise a very considerable influence upon the percentages given above. The natural increase of the population resulting from this excess amounts to 12·7 per cent. for England and Wales, and to 13 per cent. for Scotland (1861-'70), and this would also have been the actual increase had there been neither emigration from the United Kingdom nor immigration into it. Throughout England this excess of births over deaths exhibits a rate representing a decennial increase varying between 10·2 (South Wales) and 18·7 per cent. (Stafford), but is pretty uniform upon the whole, whilst in some of the Scotch counties (Bute, Perth, Argyll) the natural increase of the population, between the two census years, amounted to less than 8 per cent.

6.—We have disposed now of all preliminary questions, and proceed to a consideration of the extent and mode of migration in different parts of the United Kingdom. The great centres of population and of industry naturally attract our attention first. These counties may not only be supposed to retain the persons born within them, but also to attract a considerable amount of immigrants, and such is actually the case. It would result from this that there takes place a moderate and sometimes an excessive increase of population, and

that the Local Element is strong where this increase is due more especially to an excess of births over deaths, and weak where it results from immigration on a large scale. Lancashire is an instance of the first kind, Middlesex of the second. In Lancashire the Local Element amounts to 74·7 per cent., in Middlesex to 59·5 per cent. Of the natives of the former, 9·6 per cent. live in other parts of England and Wales; of those of the latter, as many as 17·6; and whilst the decennial increase in Lancashire amounted to 16 per cent., it reached 41 per cent. in Middlesex.

The counties which follow the same rule are Lancashire, Staffordshire, Merioneth, Carnarvon; Aberdeen, Forfar, and Fife, which have an excessive Local Element; Middlesex, Durham, Glamorgan, Lanark, and Edinburgh, which have a small Local Element, and increase at an exceptionally high rate (20 to 40 per cent.); and London, Yorkshire, and Antrim, where the Local Element is likewise deficient, but the increase moderate.

Analogous instances in Ireland are offered by the counties of Dublin, Londonderry, and Waterford.

7.—Flourishing counties contiguous to others even more flourishing furnish a large proportion of the emigrants attracted to these latter, and their places are filled up by immigrants from other counties, further removed from the centre of attraction. As a result, the population of these counties will be found to increase—sometimes at a very high rate—though the Local Element in their population is deficient. Nor will there be an excessive emigration from them to foreign parts.

London with Middlesex constitutes in this manner a centre of attraction to Essex, Herts, Berks, Surrey, and Hants; Worcester, Warwick, and Derby are contiguous to Staffordshire; Cheshire and Flint are tributary to Lancashire; Northumberland adjoins Durham, and Monmouth, Glamorgan. In Scotland the counties of Clackmannan, Dumbarton, Renfrew, Peebles, and Selkirk, though themselves increasing in population at a decennial rate varying between 8 and 34 per cent., nevertheless send large numbers of emigrants into Lanark and Edinburgh shires. The Local Element in the counties named varies between 37·4 and 73·8 per cent., the number of natives not residing in the county of their birth between 23·4 and 53·7 per cent., and the decennial increase between 8 and 40 per cent. With the exception of Peebles and Selkirk, the increase of population which would result from the excess of births over deaths approximates to the actual increase of the natives of the various counties named, and emigration to foreign parts is therefore not excessive.

The counties of Louth, Kildare, Wicklow, and Carlow in Ireland, present analogous features.

8.—Counties having no flourishing industries of their own, proportionate to their population, but within reach of others which have, exhibit a high rate of emigration, and as the counter-current of immigration is not sufficient in their case to make up for this loss, they increase but slowly in population or are actually retrogressive, and their Local Element exceeds the average. No less than twenty-six counties in England and Wales and eleven in Scotland belong to this category. In thirteen of these the natural increase of the population approximates to the increase of the natives throughout the kingdom, and we conclude from this that emigration from them to foreign parts has gone on at a slow rate. They are:—

Kent, Sussex, Leicester, Gloucester, Notts, Beds, Northampton, Cambridge, Lincoln, Cumberland, Denbigh, Banff and Ayr.

Excluding the first four the Local Element in these counties varies between 76·1 and 85·1 per cent.; the number of persons residing beyond the limits of the county of their birth varies between 24·6 and 32·2 per cent., and the decennial increase between 1 (Ayr) and 9 (Notts) per cent. The counties excepted exhibit the same features, with the exception of the decennial increase, which is considerable. In the case of Kent and Sussex this large increase is explained by the vicinity of the metropolis; in the case of Leicester and Gloucester by the rapid growth of the county towns; deducting these latter the increase is reduced to 2 and 5 per cent respectively.

In the other seventy-four counties of this category the excess of births over deaths would result in an increase far greater than that which has been ascertained to exist amongst the persons born in these counties. Emigration to foreign parts must have been going on amongst them consequently at a high rate, and this must necessarily have retarded the progress of the population of the counties in which these emigrants were born, or even led to its diminution. Such is actually the fact. The population of twelve out of twenty-four counties has remained stationary or has decreased, whilst the decennial increase in no instance exceeded 5 per cent. The Local Element varied between 70·4 and 89·8 per cent., and the number of natives residing in other parts of the kingdom between 25 and 40·7 per cent. These counties are:—

Bucks, Oxford, Hunts, Suffolk, Norfolk, Wilts, Dorset, Somerset, Hereford, Salop, Carmarthen, Pembroke, Radnor, Montgomery, Anglesey, Sutherland, Inverness, Kincardine, Perth, Argyll, Haddington, Berwick, Roxburgh, Wigtown.

The counties of Ireland exhibiting analogous features are:—

Kilkenny, Longford, Wexford, Tipperary, Armagh, Cavan, Fermanagh, Monaghan and Tyrone.

9.—Very similar to the preceding is the case of stagnant or retrogressive counties, within easy reach of remunerative labour markets. The number of emigrants from these is excessive, whilst the counter-current of immigration, though strong, is nevertheless not of sufficient volume to ensure to them an increase equal to the average throughout the country. The Local Element in these counties is below the average, the number of natives of them residing in other parts of the country is excessive, their increase in population is small, or they decrease, and the actual increase of the natives of these counties is less than what would result from the excess of births over deaths. They furnish, consequently, a large contingent towards the emigration to foreign parts. The counties belonging to this category are Rutland, Brecon, Westmoreland, Stirling, Linlithgow, Bute, Nairn, and Kinross. The Local Element in these varies between 55·1 and 71·7 per cent., the number of natives residing in other parts of the country varies between 35·5 and 41·7 per cent., whilst the increase of population in no instance exceeds 7 per cent. Devonshire may be included in the same category, for though migration from it to other parts of the kingdom does not much exceed the average, it exhibits all the other features characteristic of the other counties named above.

# APPENDIX TO CENSUS OF BRITISH ISLES, 1871.

☞ THE TABLE to be read as follows:—Amongst every hundred inhabitants of London there are 93·1 who were born in England and Wales, 1·26 who were born in Scotland, 2·80 who were born in Ireland:—63·2 were natives of London (Local Element); and of all the natives of London enumerated, 82·4 p.c. lived in London and 17·6 p.c. in other parts of England and Wales. The population of London increased 16 p.c. between 1861-71.

## ENGLAND AND WALES.

| Counties, Rural parts of Counties, and Towns. | Born in England and Wales. p. c. | Born in Scotland. p. c. | Born in Ireland. p. c. | Local Element. p. c. | Of the Persons born in each county, there lived In it. p. c. | Of the Persons born in each county, there lived Beyond it. p. c. | Decennial Increase or Decrease. p. c. |
|---|---|---|---|---|---|---|---|
| SOUTH-EAST. | | | | | | | |
| London ... ... | 93·1 | 1·26 | 2·80 | 63·2 | 82·4 | 17·6 | 16 |
| Surrey (ex.-Metrop.) | 90·0 | 2·78 | 6·21 | 55·8 | 70·9 | 29·1 | 40 |
| Kent (ex.-Metrop.) | 92·9 | 1·16 | 2·80 | 75·7 | 76·7 | 23·3 | 15 |
| Do., Rural ... | 93·5 | 1·21 | 2·85 | 74·1 | — | — | 20 |
| Canterbury ... | 93·8 | ·79 | 3·22 | 81·7 | — | — | — 1 |
| Maidstone ... | 97·2 | ·52 | 1·29 | 78·1 | — | — | 14 |
| Sussex ... ... ... | 96·6 | ·49 | ·63 | 76·9 | 74·9 | 25·1 | 15 |
| Do., Rural ... | 98·0 | ·43 | ·51 | 77·5 | — | — | 14 |
| Brighton ... ... | 95·6 | ·71 | 1·09 | 63·1 | — | — | 16 |
| Hants ... ... ... | 94·6 | 1·21 | 2·29 | 68·9 | 75·1 | 24·9 | 13 |
| Do., Rural ... | 94·9 | 1·23 | 2·17 | 71·2 | — | — | 10 |
| Portsmouth ... | 93·6 | 1·19 | 2·86 | 63·7 | — | — | 20 |
| Southampton ... | 93·7 | 1·24 | 1·32 | 66·5 | — | — | 14 |
| Winchester ... | 93·3 | ·54 | 3·97 | 67·2 | — | — | 11 |
| Berks ... ... ... | 98·1 | ·44 | ·52 | 71·5 | 63·4 | 36·6 | 11 |
| Do., Rural ... | 98·2 | ·44 | ·52 | 73·5 | — | — | 7 |
| Reading ... ... | 98·4 | ·42 | ·54 | 61·4 | — | — | 29 |
| SOUTH MIDLAND. | | | | | | | |
| Middlesex (ex.-Met.) | 96·1 | ·83 | 1·53 | 59·1 | 82·4 | 17·6 | 41 |
| Herts ... ... ... | 98·7 | ·40 | ·36 | 71·9 | 65·3 | 34·7 | 11 |
| Bucks ... ... ... | 99·1 | ·28 | ·25 | 76·4 | 64·6 | 35·3 | 5 |
| Oxfordshire ... ... | 99·1 | ·24 | ·24 | 77·5 | 65·7 | 34·3 | 4 |
| Do., Rural ... | 99·3 | ·19 | ·19 | 78·3 | — | — | 2 |
| Oxford ... ... | 98·1 | ·47 | ·49 | 77·2 | — | — | 14 |
| Northamptonshire | 99·0 | ·23 | ·38 | 79·3 | 71·4 | 28·6 | 7 |
| Do., Rural ... | 99·2 | ·17 | ·27 | 81·4 | — | — | 4 |
| Northampton ... | 97·9 | ·49 | ·93 | 74·4 | — | — | 25 |
| Hunts ... ... ... | 99·2 | ·19 | ·28 | 75·9 | 63·1 | 36·9 | — 1 |
| Beds ... ... ... | 99·3 | ·23 | ·26 | 78·5 | 72·5 | 27·5 | 8 |
| Do., Rural ... | 99·4 | ·18 | ·17 | 81·4 | — | — | 6 |
| Bedford ... ... | 95·5 | ·64 | ·92 | 63·2 | — | — | 26 |
| Cambridgeshire ... | 99·2 | ·16 | ·32 | 79·2 | 69·8 | 30·2 | 6 |
| Do., Rural ... | 99·4 | ·12 | ·29 | 80·7 | — | — | 4 |
| Cambridge ... | 98·3 | ·37 | ·48 | 72·2 | — | — | 14 |
| EAST. | | | | | | | |
| Essex ... ... ... | 98·5 | ·53 | ·96 | 72·5 | 69·8 | 30·2 | 15 |
| Do., Rural ... | 98·1 | ·51 | ·70 | 73·5 | — | — | 16 |
| Colchester... ... | 92·5 | ·91 | 4·65 | 61·1 | — | — | 11 |
| Suffolk ... ... ... | 98·7 | ·18 | ·23 | 85·4 | 70·2 | 29·8 | 4 |
| Do., Rural ... | 99·4 | ·14 | ·17 | 86·3 | — | — | 2 |
| Bury St. Edmunds | 98·6 | ·28 | ·53 | 80·0 | — | — | 12 |
| Ipswich .. ... | 98·5 | ·39 | ·48 | 81·7 | — | — | 13 |
| Norfolk... ... ... | 99·1 | ·18 | ·22 | 89·8 | 74·1 | 25·9 | 1 |
| Do., Rural ... | 99·5 | ·12 | ·15 | 90·0 | — | — | — 3 |
| Norwich ... ... | 98·8 | ·32 | ·35 | 88·5 | — | — | 7 |
| Yarmouth .. ... | 98·8 | ·27 | ·48 | 88·5 | — | — | 20 |
| SOUTH-WEST. | | | | | | | |
| Wilts ... ... ... | 99·1 | ·18 | ·26 | 83·3 | 67·3 | 32·7 | 3 |
| Do., Rural ... | 99·2 | ·17 | ·26 | 83·5 | — | — | 3 |
| Salisbury ... ... | 98·7 | ·31 | ·36 | 72·4 | — | — | 5 |
| Dorset ... ... ... | 98·3 | ·30 | ·58 | 82·3 | 71·3 | 28·7 | 4 |
| Do., Rural ... | 98·5 | ·30 | ·55 | 82·4 | — | — | 4 |
| Dorchester ... | 97·6 | ·29 | 1·22 | 78·6 | — | — | 1 |
| Devon ... ... ... | 92·2 | ·40 | 1·16 | 67·2 | 75·9 | 24·1 | 3 |
| Do., Rural ... | 98·2 | ·30 | ·58 | 65·3 | — | — | 2 |
| Exeter ... ... | 98·2 | ·32 | ·86 | 83·7 | — | — | 3 |
| Plymouth and Devonport | 93·7 | ·80 | 3·46 | 69·9 | — | — | 5 |
| Cornwall ... ... | 98·4 | ·14 | ·50 | 91·2 | 83·3 | 16·7 | — 2 |
| Do., Rural ... | 98·7 | ·13 | ·50 | 91·9 | — | — | — 2 |
| Truro .. ... ... | 98·1 | ·29 | ·44 | 88·3 | — | — | — 2 |
| Somerset ... ... | 98·6 | ·24 | ·50 | 81·0 | 70·6 | 29·4 | 4 |
| Do., Rural ... | 99·2 | ·14 | ·17 | 81·2 | — | — | 4 |
| Bath ... ... ... | 94·7 | ·60 | 1·67 | 63·8 | — | — | Sta. |
| WEST MIDLAND. | | | | | | | |
| Gloucester ... ... | 97·3 | ·41 | 1·16 | 74·2 | 73·9 | 26·1 | 10 |
| Do., Rural ... | 97·9 | ·36 | ·80 | 79·3 | — | — | 5 |
| Bristol ... ... | 95·9 | ·56 | 2·13 | 89·0 | — | — | 18 |
| Gloucester .. ... | 97·3 | ·51 | 1·01 | 74·3 | — | — | 11 |
| Herefordshire ... | 98·8 | ·32 | ·44 | 75·3 | 65·2 | 34·8 | 1 |
| Salop ... ... ... | 98·5 | ·29 | ·89 | 80·2 | 66·3 | 33·7 | 3 |
| Do., Rural ... | 98·7 | ·29 | ·75 | 81·0 | — | — | 3 |
| Shrewsbury ... | 96·5 | ·57 | 2·25 | 72·1 | — | — | 6 |
| Staffordshire... ... | 97·6 | ·34 | 1·86 | 76·1 | 79·6 | 20·4 | 15 |
| Do., Rural ... | 97·8 | ·19 | 1·72 | 76·6 | — | — | 15 |
| Wolverhampton | 95·4 | ·58 | 3·44 | 69·8 | — | — | 12 |
| Worcestershire ... | 98·4 | ·31 | ·76 | 71·2 | 66·7 | 31·3 | 10 |
| Do., Rural ... | 98·6 | ·27 | ·75 | 70·9 | — | — | 13 |
| Dudley ... ... | 98·3 | ·42 | ·98 | 75·1 | — | — | Sta. |
| Worcester .. .. | 97·9 | ·74 | ·85 | 71·5 | — | — | 6 |
| Warwickshire ... | 97·1 | ·41 | 1·82 | 70·4 | 76·1 | 23·9 | 13 |
| Do., Rural ... | 98·2 | ·38 | ·80 | 69·7 | — | — | 11 |
| Birmingham ... | 96·1 | ·45 | 2·64 | 66·3 | — | — | 16 |
| Coventry ... | 97·9 | ·28 | 1·29 | 84·7 | — | — | — 8 |
| NORTH MIDLAND. | | | | | | | |
| Leicestershire ... | 98·7 | ·28 | ·64 | 76·0 | 76·0 | 24·0 | 13 |
| Do., Rural ... | 99·0 | ·19 | ·49 | 81·7 | — | — | 2 |
| Leicester ... | 98·1 | ·42 | ·92 | 76·7 | — | — | 40 |
| Rutland ... ... | 99·4 | ·25 | ·92 | 71·7 | 56·6 | 43·4 | 1 |
| Lincolnshire ... | 96·6 | ·23 | ·47 | 85·1 | 75·4 | 24·6 | 6 |
| Do., Rural ... | 99·0 | ·21 | ·40 | 85·7 | — | — | 5 |
| Boston ... ... | 98·4 | ·32 | ·85 | 84·3 | — | — | — 1 |
| Lincoln ... ... | 97·8 | ·50 | 1·05 | 77·3 | — | — | 27 |
| Notts ... ... | 98·5 | ·30 | ·61 | 76·7 | 73·7 | 26·3 | 9 |
| Do., Rural ... | 99·0 | ·24 | ·39 | 77·4 | — | — | 8 |
| Nottingham ... | 97·1 | ·45 | 1·42 | 73·2 | — | — | 16 |
| Derbyshire ... | 98·0 | ·20 | 1·34 | 73·8 | 74·4 | 25·6 | 12 |
| Do., Rural ... | 98·2 | ·27 | 1·20 | 74·4 | — | — | 11 |
| Derby ... ... | 96·7 | ·51 | 2·23 | 70·1 | — | — | 16 |
| NORTH-WEST. | | | | | | | |
| Cheshire ... ... | 92·0 | 1·30 | 6·05 | 67·4 | 71·8 | 28·2 | 11 |
| Do., Rural ... | 91·8 | 1·43 | 6·01 | 64·5 | — | — | 14 |
| Chester ... ... | 91·8 | 1·22 | 5·81 | 62·4 | — | — | 13 |
| Macclesfield ... | 95·9 | ·41 | 3·50 | 77·8 | — | — | — 2 |
| Stockport ... | 91·7 | ·38 | 7·50 | 82·2 | — | — | — 3 |
| Lancashire ... ... | 91·1 | 1·60 | 7·09 | 74·7 | 90·4 | 9·6 | 16 |
| Do., Rural ... | 94·1 | ·90 | 4·42 | 80·2 | — | — | 17 |
| Bolton ... ... | 92·1 | ·86 | 6·41 | 84·0 | — | — | 18 |
| Lancaster ... | 94·6 | 1·19 | 3·85 | 77·5 | — | — | 8 |
| Liverpool ... | 77·5 | 4·13 | 15·55 | 58·7 | — | — | 11 |
| Manchester ... | 87·6 | 1·89 | 8·95 | 66·1 | — | — | 12 |
| Preston ... ... | 93·4 | ·73 | 5·44 | 86·3 | — | — | 3 |
| Barrow-in-F'rn'ss | 91·1 | 2·86 | 5·04 | 52·2 | — | — | 1700? |
| NORTH. | | | | | | | |
| Yorkshire ... ... | 96·1 | ·45 | 1·69 | 59·0 | 88·4 | 11·6 | 19 |
| Do., Rural ... | 98·7 | ·26 | ·86 | 51·3 | — | — | 13 |
| Bradford ... ... | 92·6 | ·96 | 5·75 | 81·3 | — | — | 37 |
| Halifax ... ... | 94·3 | ·65 | 4·76 | 82·7 | — | — | 28 |
| Huddersfield ... | 97·0 | ·61 | 2·11 | 89·5 | — | — | 15 |
| Leeds ... ... | 94·5 | ·84 | 3·91 | 83·4 | — | — | 25 |
| Sheffield ... ... | 96·3 | ·59 | 2·54 | 73·2 | — | — | 30 |
| Hull ... ... ... | 94·1 | 1·29 | 2·23 | 72·8 | — | — | 24 |
| Middlesboro' ... | 86·3 | 2·94 | 9·14 | 50·1 | — | — | 108 |
| York .. ... ... | 94·9 | ·91 | 3·47 | 81·3 | — | — | 8 |
| Durham.. ... ... | 90·6 | 3·15 | 5·33 | 65·0 | 85·4 | 14·6 | 35 |
| Do., Rural ... | 91·0 | 2·71 | 5·73 | 64·9 | — | — | 39 |
| Durham ... ... | 91·7 | 2·67 | 5·02 | 71·4 | — | — | 2 |
| Gateshead ... | 87·9 | 4·71 | 6·79 | 54·4 | — | — | 45 |
| South Shields ... | 90·6 | 3·98 | 3·56 | 67·6 | — | — | 29 |
| Sunderland ... | 89·8 | 4·22 | 4·56 | 72·1 | — | — | 20 |
| Northumberland .. | 89·4 | 5·88 | 3·75 | 73·6 | 76·1 | 23·9 | 13 |
| Do., Rural ... | 91·2 | 5·52 | 2·86 | 79·4 | — | — | 10 |
| Newcastle-on-T. | 86·5 | 6·94 | 5·38 | 64·1 | — | — | 18 |
| Tynemouth ... | 88·6 | 4·41 | 3·40 | 72·0 | — | — | 14 |
| Cumberland... ... | 89·3 | 4·70 | 5·40 | 79·4 | 75·3 | 24·7 | 7 |
| Do., Rural ... | 89·8 | 3·86 | 5·60 | 80·0 | — | — | 8 |
| Carlisle ... ... | 85·8 | 9·51 | 4·20 | 75·6 | — | — | 6 |
| Westmoreland ... | 96·7 | 2·03 | ·86 | 70·6 | 64·1 | 35·9 | 7 |

## WALES.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Monmouthshire ... | 95·6 | ·31 | 3·55 | 62·7 | 76·6 | 23·4 | 12 |
| Do., Rural ... | 96·7 | ·23 | 2·76 | 65·8 | — | — | 11 |
| Newport ... ... | 89·0 | ·89 | 8·44 | 49·8 | — | — | 16 |
| Glamorgan ... .. | 91·7 | ·31 | 2·38 | 70·4 | 89·7 | 10·3 | 25 |
| Do., Rural ... | 97·9 | ·23 | 1·46 | 73·9 | — | — | 30 |
| Swansea ... ... | 93·4 | ·66 | 3·39 | 63·5 | — | — | 21 |
| Merthyr Tydfil... | 92·6 | ·40 | 6·62 | 59·2 | — | — | 4 |
| Carmarthen ... .. | 98·9 | ·20 | ·41 | 86·3 | 71·4 | 28·6 | 4 |
| Pembroke ... ... | 98·2 | ·29 | ·97 | 86·3 | 73·5 | 26·4 | — 4 |
| Cardigan ... ... | 99·6 | ·14 | ·18 | 90·9 | 78·4 | 21·6 | 2 |
| Brecknock ... ... | 98·2 | ·55 | ·94 | 67·8 | 64·5 | 35·5 | — 3 |
| Radnor ... ... ... | 99·5 | ·19 | ·24 | 77·9 | 59·3 | 40·7 | Sta. |
| Montgomery ... | 99·5 | ·14 | ·19 | 83·3 | 70·8 | 29·2 | 1 |
| Flint ... ... ... | 96·0 | ·48 | 1·88 | 73·2 | 67·9 | 32·1 | 9 |
| Denbigh ... ... | 98·4 | ·45 | ·98 | 76·1 | 70·2 | 29·8 | 4 |
| Merioneth ... ... | 99·4 | ·22 | ·23 | 73·9 | 77·0 | 23·0 | 20 |
| Carnarvon ... ... | 99·2 | ·24 | ·49 | 81·2 | 83·7 | 16·3 | 11 |
| Anglesey ... ... | 99·0 | ·15 | ·73 | 89·1 | 75·0 | 25·0 | — 7 |
| England and Wales | 95·5 | 0·9 | 2·49 | 74·0 | 77·9 | 22·1 | 13 |

## SCOTLAND.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NORTH. | | | | | | | |
| Shetland ... ... | ·34 | 99·6 | ·04 | 97·6 | 91·0 | 9·0 | Sta. |
| Orkney... ... ... | ·32 | 99·0 | ·12 | 93·4 | 88·1 | 11·9 | — 3 |
| Caithness ... ... | ·52 | 98·9 | ·21 | 88·6 | 80·7 | 19·3 | — 3 |
| Sutherland ... ... | ·55 | 99·1 | ·12 | 86·4 | 72·6 | 27·4 | — 4 |
| NORTH-WEST. | | | | | | | |
| Ross & Cromarty | ·51 | 99·0 | ·19 | 89·4 | 80·2 | 19·8 | Sta. |
| Inverness ... ... | ·89 | 98·4 | ·34 | 82·5 | 70·1 | 29·9 | Sta. |
| Do., Rural ... | ·60 | 98·9 | ·25 | 87·0 | — | — | — 4 |
| Inverness ... ... | 2·35 | 95·5 | 1·0 | 62·7 | — | — | 16 |
| NORTH-EAST. | | | | | | | |
| Nairn ... ... ... | 1·16 | 97·9 | ·29 | 59·0 | 55·5 | 44·5 | Sta. |
| Elgin ... ... ... | ·87 | 98·3 | ·27 | 69·3 | 76·1 | 23·9 | 1 |
| Banff ... ... ... | ·56 | 99·0 | ·20 | 78·7 | 67·7 | 32·3 | 5 |
| Aberdeenshire ... | 1·10 | 98·0 | ·43 | 84·9 | 85·6 | 14·4 | 10 |
| Do., Rural ... | ·52 | 99·0 | ·17 | 88·9 | — | — | 6 |
| Aberdeen... ... | 2·16 | 96·2 | ·88 | 77·9 | — | — | 19 |
| Kincardine ... ... | ·97 | 98·4 | ·35 | 72·2 | 61·9 | 39·1 | 1 |
| EAST MIDLAND. | | | | | | | |
| Forfar ... ... ... | 1·34 | 91·9 | 6·28 | 71·2 | 85·9 | 14·1 | 16 |
| Do., Rural ... | 1·05 | 98·1 | ·42 | 77·2 | — | — | — 1 |
| Arbroath ... ... | 1·09 | 96·7 | 1·59 | 85·1 | — | — | 14 |
| Dundee ... ... | 1·63 | 85·9 | 11·93 | 62·9 | — | — | 24 |
| Forfar ... ... | ·42 | 99·3 | ·36 | 90·7 | — | — | 19 |
| Montrose ... ... | 1·72 | 97·4 | ·65 | 74·6 | — | — | 7 |
| Perthshire ... ... | 1·65 | 96·0 | 1·80 | 74·7 | 64·0 | 36·0 | — 3 |
| Do., Rural ... | 1·36 | 96·7 | 1·36 | 75·3 | — | — | — 5 |
| Perth... ... ... | 2·72 | 92·3 | 3·57 | 72·1 | — | — | 1 |
| Fife ... ... ... | 1·35 | 97·0 | 1·01 | 83·7 | 76·1 | 23·9 | 4 |
| Do., Rural ... | 1·40 | 97·1 | ·86 | 84·0 | — | — | 2 |
| Dunfermline ... | 1·03 | 96·3 | 2·15 | 81·3 | — | — | 11 |
| Kirkcaldy .. ... | 1·44 | 96·9 | 1·26 | 83·0 | — | — | 15 |
| Kinross ... ... | 1·22 | 98·0 | ·45 | 55·4 | 48·5 | 51·5 | — 10 |
| Clackmannan ... | 1·91 | 95·3 | 1·12 | 61·4 | 61·4 | 38·6 | 11 |
| WEST MIDLAND. | | | | | | | |
| Stirling... ... ... | 1·16 | 93·6 | 4·67 | 65·7 | 61·3 | 38·7 | 6 |
| Do., Rural ... | ·97 | 94·1 | 4·42 | 67·6 | — | — | 6 |
| Stirling ... ... | 2·35 | 90·1 | 6·03 | 53·9 | — | — | 4 |
| Dumbartonshire ... | 1·87 | 87·1 | 10·47 | 47·3 | 59·7 | 40·3 | 13 |
| Do., Rural ... | 1·82 | 88·8 | 8·82 | 47·2 | — | — | 2 |
| Dumbarton ... | 2·22 | 79·7 | 17·68 | 39·4 | — | — | 15 |
| Argyll ... ... ... | 1·22 | 97·2 | 1·26 | 77·4 | 64·0 | 36·0 | — 5 |
| Bute ... ... ... | 1·91 | 93·5 | 3·72 | 55·1 | 62·5 | 37·5 | 4 |
| SOUTH-WEST. | | | | | | | |
| Renfrew ... ... | 1·99 | 83·0 | 14·43 | 56·6 | 68·3 | 31·7 | 16 |
| Do., Rural ... | 1·82 | 83·2 | 14·36 | 50·7 | — | — | 13 |
| Greenock ... ... | 2·79 | 80·1 | 16·58 | 51·6 | — | — | 36 |
| Paisley ... ... | 1·24 | 87·7 | 9·75 | 71·2 | — | — | 2 |
| Ayrshire ... ... | 1·22 | 90·5 | 7·81 | 77·6 | 73·4 | 26·6 | 1 |
| Do., Rural ... | 1·12 | 81·8 | 8·04 | 77·2 | — | — | 1 |
| Ayr ... ... ... | 2·84 | 89·2 | 7·23 | 75·1 | — | — | — 4 |
| Kilmarnock ... | ·91 | 91·7 | 6·71 | 80·0 | — | — | 1 |
| Lanarkshire ... | 2·71 | 83·3 | 13·30 | 57·7 | 85·4 | 14·6 | 23 |
| Do., Rural ... | 2·39 | 85·3 | 11·82 | 61·7 | — | — | 28 |
| Glasgow ... ... | 2·95 | 81·9 | 14·32 | 58·4 | — | — | 19 |
| Hamilton .. ... | 3·12 | 87·4 | 8·57 | 75·8 | — | — | 8 |
| Airdrie ... ... | 1·11 | 84·4 | 14·16 | 69·8 | — | — | 4 |
| SOUTH-EAST. | | | | | | | |
| Linlithgow ... ... | 1·85 | 89·7 | 8·04 | 57·5 | 58·3 | 41·7 | 6 |
| Edinburghshire ... | 4·18 | 90·0 | 4·27 | 57·6 | 79·7 | 20·3 | 20 |
| Do., Rural ... | 3·57 | 90·3 | | | | | |
| Edinburgh and Leith ... | 4·46 | 89·9 | | | | | |
| Haddington ... ... | 2·26 | 93·4 | | | | | |
| Berwick ... ... | 5·61 | 92·9 | | | | | |
| Peebles ... ... | 1·69 | 95·8 | | | | | |
| Selkirk ... ... ... | 2·47 | 94·4 | | | | | |
| SOUTH. | | | | | | | |
| Roxburgh ... ... | 4·95 | 92·8 | | | | | |
| Do., Rural ... | 5·21 | 92·8 | | | | | |
| Hawick ... ... | 4·16 | 92·7 | | | | | |
| Dumfriesshire ... | 3·78 | 95·1 | | | | | |
| Do., Rural ... | 4·00 | 95·1 | | | | | |
| Dumfries ... ... | 3·06 | 93·4 | | | | | |
| Kirkcudbright ... | 1·70 | 96·6 | | | | | |
| Wigtown ... ... | 2·07 | 89·1 | | | | | |
| Scotland ... ... | 2·10 | 91·1 | | | | | |

## IRELAND.

| | | |
|---|---|---|
| LEINSTER. | | |
| Carlow ... ... ... | ·78 | ·17 |
| Dublin County ... | 4·57 | ·98 |
| Do., Rural ... | 5·21 | ·95 |
| Dublin ... ... | 4·56 | 1·01 |
| Kildare ... ... | 6·05 | ·66 |
| Kilkenny ... ... | ·74 | ·15 |
| King's County ... | 1·43 | ·27 |
| Longford ... ... | ·54 | ·36 |
| Louth ... ... ... | 1·75 | ·29 |
| Meath ... ... ... | ·69 | ·13 |
| Queen's County ... | ·69 | ·23 |
| Westmeath ... ... | 1·39 | ·14 |
| Wexford ... ... | ·71 | ·14 |
| Wicklow ... ... | 1·08 | ·13 |
| MUNSTER. | | |
| Clare ... ... ... | ·41 | ·07 |
| Cork County ... | 2·12 | ·20 |
| Do., Rural ... | 2·09 | ·16 |
| Cork ... ... ... | 2·36 | ·39 |
| Kerry ... ... ... | ·51 | ·08 |
| Limerick ... ... | 1·04 | ·13 |
| Tipperary ... ... | 1·26 | ·15 |
| Waterford ... ... | 1·31 | ·18 |
| ULSTER. | | |
| Antrim ... ... ... | 1·46 | 1·21 |
| Do., Rural ... | ·47 | ·52 |
| Belfast ... ... | 2·65 | 2·22 |
| Armagh ... ... | ·65 | ·31 |
| Cavan ... ... ... | ·24 | ·12 |
| Donegal ... ... | ·31 | ·32 |
| Down ... ... ... | ·67 | ·42 |
| Fermanagh ... ... | ·52 | ·27 |
| Londonderry ... | ·57 | ·67 |
| Monaghan ... ... | ·33 | ·21 |
| Tyrone ... ... ... | ·29 | ·23 |
| CONNAUGHT. | | |
| Galway ... ... ... | ·53 | ·18 |
| Leitrim ... ... ... | ·16 | ·12 |
| Mayo ... ... ... | ·54 | ·16 |
| Roscommon ... ... | ·52 | ·13 |
| Sligo ... ... ... | ·45 | ·30 |
| Ireland ... ... ... | 1·26 | 0·37 |

## MAN AND CHANNEL ISLANDS.

| | | |
|---|---|---|
| Man ... ... ... | 8·86 | 1·53 |
| Jersey ... ... ... | 1·52 | ·53 |
| Guernsey ... ... | 16·56 | ·45 |
| Man & Chan. Isles | 13·13 | ·89 |
| British Isles ... ... | 69·08 | 10·42 |

* That is to say, there has been n
to the Channel Islands. There can
considerable number of Manx men e
but the Census Returns do not enab

3·1 who were born in England and Wales, 1·26 who were born in Scotland, 2·80 who were bo
p.c. in other parts of England and Wales. The population of London increased 16 p.c. be

| in d. | Local Element. p.c. | Of the Persons born in each county, there lived In it. p.c. | Beyond it. p.c. | Decennial Increase or Decrease. p.c. |
|---|---|---|---|---|
| 86 | 76·1 | 79·6 | 20·4 | 15 |
| 72 | 76·6 | — | — | 15 |
| 84 | 69·8 | — | — | 12 |
| 76 | 71·2 | 66·7 | 31·3 | 10 |
| 75 | 70·9 | — | — | 13 |
| 58 | 75·1 | — | — | Sta. |
| 85 | 71·5 | — | — | 6 |
| 82 | 70·4 | 76·1 | 23·9 | 13 |
| 80 | 69·7 | — | — | 11 |
| 64 | 66·3 | — | — | 16 |
| 29 | 84·7 | — | — | — 8 |
| 84 | 76·0 | 76·0 | 24·0 | 13 |
| 99 | 81·7 | — | — | 2 |
| 92 | 76·7 | — | — | 40 |
| 92 | 71·7 | 56·6 | 43·4 | 1 |
| 87 | 85·1 | 75·4 | 24·6 | 6 |
| 10 | 85·7 | — | — | 5 |
| 95 | 84·3 | — | — | — 1 |
| 95 | 77·3 | — | — | 27 |
| 91 | 76·7 | 73·7 | 26·3 | 9 |
| 89 | 77·4 | — | — | 8 |
| 92 | 73·2 | — | — | 16 |
| 84 | 73·8 | 74·4 | 25·6 | 12 |
| 80 | 74·4 | — | — | 11 |
| 23 | 70·1 | — | — | 16 |
| 95 | 67·4 | 71·8 | 28·2 | 11 |
| 91 | 64·5 | — | — | 14 |
| 81 | 62·4 | — | — | 13 |
| 50 | 77·8 | — | — | — 2 |
| 30 | 82·2 | — | — | — 3 |
| 09 | 74·7 | 90·4 | 9·6 | 16 |
| 42 | 80·2 | — | — | 17 |
| 11 | 84·0 | — | — | 18 |
| 85 | 77·5 | — | — | 8 |
| 55 | 58·7 | — | — | 11 |
| 95 | 66·1 | — | — | 12 |
| 44 | 86·3 | — | — | 3 |
| 04 | 52·2 | — | — | 1700? |
| 19 | 59·0 | 88·4 | 11·6 | 19 |
| 86 | 51·3 | — | — | 13 |
| 75 | 81·3 | — | — | 37 |
| 76 | 82·7 | — | — | 28 |
| 11 | 89·5 | — | — | 15 |
| 91 | 83·4 | — | — | 25 |
| 54 | 73·2 | — | — | 30 |
| 23 | 72·8 | — | — | 24 |
| 14 | 50·1 | — | — | 108 |
| 47 | 81·3 | — | — | 8 |
| 33 | 65·0 | 85·4 | 14·6 | 35 |
| 73 | 64·9 | — | — | 39 |
| 02 | 71·4 | — | — | 2 |
| 79 | 54·4 | — | — | 45 |
| 56 | 67·6 | — | — | 29 |
| 56 | 72·1 | — | — | 20 |
| 75 | 73·6 | 76·1 | 23·9 | 13 |
| 86 | 79·4 | — | — | 10 |
| 38 | 64·1 | — | — | 18 |
| 40 | 72·0 | — | — | 14 |
| 40 | 79·4 | 75·3 | 24·7 | 7 |
| 60 | 80·0 | — | — | 8 |
| 20 | 75·6 | — | — | 6 |
| 86 | 70·6 | 64·1 | 35·9 | 7 |
| 5. | | | | |
| 55 | 62·7 | 76·6 | 23·4 | 12 |
| 76 | 65·8 | — | — | 11 |
| 44 | 49·8 | — | — | 16 |
| 38 | 70·4 | 89·7 | 10·3 | 25 |
| 46 | 73·9 | — | — | 30 |
| 39 | 63·5 | — | — | 21 |
| 62 | 59·2 | — | — | 4 |

| Counties, Rural parts of Counties, and Towns. | Born in England and Wales. p.c. | Born in Scotland. p.c. | Born in Ireland. p.c. | Local Element. p.c. | Of the Persons born in each county, there lived In it. p.c. | Beyond it. p.c. | Decennial Increase or D crea p.c. |
|---|---|---|---|---|---|---|---|
| Carmarthen ... .. | 98·9 | ·20 | ·41 | 86·3 | 71·4 | 28·6 | 4 |
| Pembroke ... ... | 98·2 | ·29 | ·97 | 86·3 | 73·5 | 26·4 | — 4 |
| Cardigan ... ... | 99·6 | ·14 | ·18 | 90·9 | 78·4 | 21·6 | 2 |
| Brecknock ... ... | 98·2 | ·55 | ·94 | 67·8 | 64·5 | 35·5 | — 3 |
| Radnor ... ... ... | 99·5 | ·19 | ·24 | 77·9 | 59·3 | 40·7 | Sta |
| Montgomery ... | 99·5 | ·14 | ·19 | 83·3 | 70·8 | 29·2 | 1 |
| Flint ... ... ... | 96·0 | ·48 | 1·88 | 73·2 | 67·9 | 32·1 | 9 |
| Denbigh ... ... | 98·4 | ·45 | ·98 | 76·1 | 70·2 | 29·8 | 4 |
| Merioneth ... ... | 99·4 | ·22 | ·23 | 73·9 | 77·0 | 23·0 | 20 |
| Carnarvon ... ... | 99·2 | ·24 | ·49 | 81·2 | 83·7 | 16·3 | 11 |
| Anglesey ... ... | 99·0 | ·15 | ·73 | 89·1 | 75·0 | 25·0 | — 7 |
| England and Wales | 95·5 | 0·9 | 2·49 | 74·0 | 77·9 | 22·1 | 1 |
| NORTH. | | | SCOTLAND. | | | | |
| Shetland ... ... | ·34 | 99·6 | ·04 | 97·6 | 91·0 | 9·0 | Sta |
| Orkney ... ... ... | ·52 | 99·0 | ·12 | 93·4 | 88·1 | 11·9 | — 3 |
| Caithness ... ... | ·52 | 98·9 | ·21 | 88·6 | 80·7 | 19·3 | — 3 |
| Sutherland ... ... | ·55 | 99·1 | ·12 | 86·4 | 72·6 | 27·4 | — 4 |
| NORTH-WEST. | | | | | | | |
| Ross & Cromarty | ·51 | 99·0 | ·19 | 89·4 | 80·2 | 19·8 | Sta |
| Inverness ... ... | ·89 | 98·4 | ·34 | 82·5 | 70·1 | 29·9 | Sta |
| Do., Rural ... | ·60 | 98·9 | ·25 | 87·0 | — | — | — 4 |
| Inverness ... ... | 2·35 | 95·5 | 1·0 | 62·7 | — | — | 1 |
| NORTH-EAST. | | | | | | | |
| Nairn ... ... ... | 1·16 | 97·9 | ·29 | 59·0 | 55·5 | 44·5 | Sta |
| Elgin ... ... ... | ·87 | 98·3 | ·27 | 69·3 | 76·1 | 23·9 | |
| Banff ... ... ... | ·56 | 99·0 | ·20 | 78·7 | 67·7 | 32·3 | |
| Aberdeenshire ... | 1·10 | 98·0 | ·43 | 84·9 | 85·6 | 14·4 | 1 |
| Do., Rural ... | ·52 | 99·0 | ·17 | 88·9 | — | — | |
| Aberdeen ... ... | 2·16 | 96·2 | ·88 | 77·9 | — | — | 1 |
| Kincardine ... ... | ·97 | 98·4 | ·35 | 72·2 | 61·9 | 39·1 | |
| EAST MIDLAND. | | | | | | | |
| Forfar ... ... ... | 1·34 | 91·9 | 6·28 | 71·2 | 85·9 | 14·1 | 1 |
| Do., Rural ... | 1·05 | 98·1 | ·42 | 77·2 | — | — | — |
| Arbroath ... ... | 1·09 | 96·7 | 1·59 | 85·1 | — | — | 1 |
| Dundee ... ... | 1·63 | 85·9 | 11·93 | 62·9 | — | — | 2 |
| Forfar ... ... | ·42 | 99·3 | ·36 | 90·7 | — | — | 1 |
| Montrose ... ... | 1·72 | 97·4 | ·65 | 74·6 | — | — | |
| Perthshire ... ... | 1·65 | 96·0 | 1·80 | 74·7 | 64·0 | 36·0 | — |
| Do., Rural ... | 1·36 | 96·7 | 1·36 | 75·3 | — | — | — |
| Perth ... ... ... | 2·72 | 92·3 | 3·57 | 72·1 | — | — | |
| Fife ... ... ... | 1·35 | 97·0 | 1·01 | 83·7 | 76·1 | 23·9 | |
| Do., Rural ... | 1·40 | 97·1 | ·86 | 84·0 | — | — | |
| Dunfermline ... | 1·03 | 96·3 | 2·15 | 81·3 | — | — | 1 |
| Kirkcaldy ... ... | 1·44 | 96·9 | 1·26 | 83·0 | — | — | 1 |
| Kinross ... ... | 1·22 | 98·0 | ·45 | 55·4 | 48·5 | 51·5 | — 1 |
| Clackmannan ... | 1·91 | 95·3 | 1·12 | 61·4 | 61·4 | 38·6 | 1 |
| WEST MIDLAND. | | | | | | | |
| Stirling ... ... ... | 1·16 | 93·6 | 4·67 | 65·7 | 61·3 | 38·7 | |
| Do., Rural ... | ·97 | 94·1 | 4·42 | 67·6 | — | — | |
| Stirling ... ... | 2·35 | 90·1 | 6·03 | 53·9 | — | — | |
| Dumbartonshire ... | 1·87 | 87·1 | 10·47 | 47·3 | 59·7 | 40·3 | 1 |
| Do., Rural ... | 1·82 | 88·8 | 8·82 | 47·2 | — | — | |
| Dumbarton ... | 2·22 | 79·7 | 17·68 | 39·4 | — | — | 1 |
| Argyll ... ... ... | 1·22 | 97·2 | 1·26 | 77·4 | 64·0 | 36·0 | — |
| Bute ... ... ... | 1·91 | 93·5 | 3·72 | 55·1 | 62·5 | 37·5 | |
| SOUTH-WEST. | | | | | | | |
| Renfrew ... ... | 1·99 | 83·0 | 14·43 | 56·6 | 68·3 | 31·7 | |
| Do., Rural ... | 1·82 | 83·2 | 14·36 | 50·7 | — | — | |
| Greenock ... ... | 2·79 | 80·1 | 16·58 | 51·6 | — | — | |
| Paisley ... ... | 1·24 | 87·7 | 9·75 | 71·2 | — | — | |
| Ayrshire ... ... | 1·22 | 90·5 | 7·81 | 77·6 | 73·4 | 26·6 | |
| Do., Rural ... | 1·12 | 81·8 | 8·04 | 77·2 | — | — | |
| Ayr ... ... ... | 2·84 | 89·2 | 7·23 | 75·1 | — | — | — |
| Kilmarnock ... | ·91 | 91·7 | 6·71 | 80·0 | — | — | |
| Lanarkshire ... | 2·71 | 83·3 | 13·30 | 57·7 | 85·4 | 14·6 | |
| Do., Rural ... | 2·39 | 85·3 | 11·82 | 61·7 | — | — | |
| Glasgow ... ... | 2·95 | 81·9 | 14·32 | 58·4 | — | — | |
| Hamilton ... ... | 3·12 | 87·4 | 8·57 | 75·8 | — | — | |
| Airdrie ... ... | 1·11 | 84·4 | 14·16 | 69·8 | — | — | |
| SOUTH-EAST. | | | | | | | |
| Linlithgow ... ... | 1·85 | 89·7 | 8·04 | 57·5 | 58·3 | 41·7 | |
| Edinburghshire ... | 4·18 | 90·0 | 4·27 | 57·6 | 79·7 | 20·3 | |

re born in Ireland :—63·2 were natives of London (constituting the Local
c. between 1861-71.

| Counties, Rural parts of Counties, and Towns. | Born in England and Wales. p. c. | Born in Scotland. p. c. | Born in Ireland. p. c. | Local Element. p. c. | Of the Persons born in each county, there lived In it. p. c. | Beyond it. p. c. | Decennial Increase or Decrease. p. c. |
|---|---|---|---|---|---|---|---|
| Do., Rural ... | 3·57 | 90·3 | 4·99 | 60·2 | — | — | 7 |
| Edinburgh and Leith ... | 4·46 | 89·9 | 4·02 | 56·7 | — | — | 20 |
| Haddington ... ... | 2·26 | 93·4 | 3·85 | 70·4 | 62·0 | 38·0 | Sta. |
| Berwick ... ... | 5·61 | 92·9 | 1·16 | 72·8 | 67·0 | 33·0 | Sta. |
| Peebles ... ... ... | 1·69 | 95·8 | 2·03 | 52·2 | 46·3 | 53·7 | 8 |
| Selkirk ... ... ... | 2·47 | 94·4 | 2·66 | 37·4 | 63·4 | 36·6 | 34 |
| SOUTH. | | | | | | | |
| Roxburgh ... ... | 4·95 | 92·8 | 1·79 | 71·2 | 66·0 | 34·0 | Sta. |
| Do., Rural ... | 5·21 | 92·8 | 1·59 | 70·0 | — | — | — 7 |
| Hawick ... ... | 4·16 | 92·7 | 2·33 | 74·6 | — | — | 38 |
| Dumfriesshire ... | 3·78 | 95·1 | 1·06 | 81·5 | 76·8 | 23·2 | — 1 |
| Do., Rural ... | 4·00 | 95·1 | ·49 | 85·9 | — | — | — 4 |
| Dumfries ... ... | 3·06 | 93·4 | 3·21 | 64·4 | — | — | 10 |
| Kirkcudbright ... | 1·70 | 96·6 | 1·45 | 79·2 | 79·4 | 20·6 | — 1 |
| Wigtown ... ... | 2·07 | 89·1 | 8·37 | 77·6 | 72·3 | 27·7 | — 8 |
| Scotland ... ... | 2·10 | 91·1 | 6·18 | 68·9 | 75·6 | 24·4 | 10 |
| **IRELAND.** | | | | | | | |
| LEINSTER. | | | | | | | |
| Carlow ... ... ... | ·78 | ·17 | 98·9 | 85·0 | 76·4 | 23·6 | — 8 |
| Dublin County ... | 4·57 | ·98 | 93·3 | 63·8 | 95·8 | 4·2 | — 1 |
| Do., Rural ... | 5·21 | ·95 | 92·5 | 64·7 | — | — | + 3 |
| Dublin ... ... | 4·56 | 1·01 | 94·1 | 63·3 | — | — | — 4 |
| Kildare ... ... | 6·05 | ·66 | 92·8 | 72·4 | 76·2 | 23·8 | — 7 |
| Kilkenny ... ... | ·74 | ·15 | 99·3 | 90·5 | 87·2 | 12·8 | — 12 |
| King's County ... | 1·43 | ·27 | 97·6 | 83·5 | 84·6 | 15·4 | — 16 |
| Longford ... ... | ·54 | ·36 | 98·1 | 90·1 | 89·5 | 10·5 | — 10 |
| Louth ... ... ... | 1·75 | ·29 | 97·8 | 86·1 | 87·6 | 12·4 | — 8 |
| Meath ... ... ... | ·69 | ·13 | 99·6 | 88·5 | 81·0 | 19·0 | — 14 |
| Queen's County ... | ·69 | ·23 | 98·9 | 87·6 | 82·9 | 17·1 | — 15 |
| Westmeath ... ... | 1·39 | ·14 | 98·2 | 87·9 | 84·2 | 15·8 | — 14 |
| Wexford ... ... | ·71 | ·14 | 98·7 | 92·9 | 87·6 | 12·4 | — 8 |
| Wicklow ... ... | 1·08 | ·13 | 98·4 | 84·0 | 69·9 | 30·1 | — 9 |
| MUNSTER. | | | | | | | |
| Clare ... ... ... | ·41 | ·07 | 99·2 | 94·9 | 93·1 | 6·9 | — 11 |
| Cork County ... | 2·12 | ·20 | 99·2 | 92·5 | 96·0 | 4·0 | — 5 |
| Do., Rural ... | 2·09 | ·16 | 97·1 | 93·2 | — | — | — 6 |
| Cork ... ... ... | 2·36 | ·39 | 96·9 | 89·5 | — | — | — 2 |
| Kerry ... ... ... | ·51 | ·08 | 99·0 | 96·0 | 95·5 | 4·5 | — 3 |
| Limerick ... ... | 1·04 | ·13 | 98·5 | 89·2 | 90·7 | 9·3 | — 12 |
| Tipperary ... ... | 1·26 | ·15 | 98·2 | 89·5 | 88·3 | 11·7 | — 13 |
| Waterford ... ... | 1·31 | ·18 | 98·4 | 87·5 | 91·1 | 8·9 | — 8 |
| ULSTER. | | | | | | | |
| Antrim ... ... ... | 1·46 | 1·21 | 96·0 | 85·3 | 95·1 | 4·9 | + 11 |
| Do., Rural ... | ·47 | ·52 | 98·9 | 92·5 | — | — | — 5 |
| Belfast ... ... | 2·65 | 2·22 | 94·8 | 77·7 | — | — | + 43 |
| Armagh ... ... | ·65 | ·31 | 98·8 | 88·9 | 86·0 | 14·0 | — 11 |
| Cavan ... ... ... | ·24 | ·12 | 99·5 | 92·7 | 89·6 | 10·4 | — 9 |
| Donegal ... ... | ·31 | ·32 | 99·3 | 96·0 | 93·5 | 6·5 | — 8 |
| Down ... ... ... | ·67 | ·42 | 98·9 | 92·7 | 92·5 | 7·5 | — 7 |
| Fermanagh ... ... | ·52 | ·27 | 98·8 | 89·9 | 87·3 | 12·7 | — 12 |
| Londonderry ... | ·57 | ·67 | 98·5 | 88·7 | 90·9 | 9·1 | — 5 |
| Monaghan ... ... | ·33 | ·21 | 99·3 | 92·1 | 87·1 | 12·9 | — 11 |
| Tyrone ... ... ... | ·29 | ·23 | 99·1 | 91·1 | 89·2 | 10·8 | — 10 |
| CONNAUGHT. | | | | | | | |
| Galway ... ... ... | ·53 | ·18 | 99·1 | 94·7 | 93·9 | 6·1 | — 9 |
| Leitrim ... ... ... | ·16 | ·12 | 99·6 | 93·3 | 91·9 | 9·1 | — 9 |
| Mayo ... ... ... | ·54 | ·16 | 99·2 | 96·0 | 96·4 | 3·6 | — 3 |
| Roscommon ... ... | ·52 | ·13 | 99·2 | 93·7 | 92·7 | 7·3 | — 10 |
| Sligo ... ... ... | ·45 | ·30 | 99·1 | 94·0 | 93·9 | 6·1 | — 8 |
| Ireland ... ... ... | 1·26 | 0·37 | 98·0 | 88·8 | 88·7 | 9·5 | — 7 |
| **MAN AND CHANNEL ISLANDS.** | | | | | | | |
| Man ... ... ... | 8·86 | 1·53 | 3·49 | 85·5 | 100·0 | 0·0* | 3 |
| Jersey ... ... ... | 1·52 | ·53 | ·53 | 69·3 | 98·0 | 2·0 | 2 |
| Guernsey ... ... | 16·56 | ·45 | 1·84 | 75·3 | 95·9 | 4·1 | 13 |
| Man & Chan. Isles | 13·13 | ·89 | 2·99 | 76·8 | 98·2 | 1·8 | 5 |
| British Isles ... ... | 69·08 | 10·42 | 19·24 | 76·4 | 73·4 | 26·6 | 9 |

* That is to say, there has been no migration from the Isle of Man to the Channel Islands. There can be no doubt, however, that a very considerable number of Manx men emigrate to Lancashire and Scotland, but the Census Returns do not enable us to state their numbers.

Meath, Westmeath, King's and Queen's Counties, in Ireland, present analogous features.

10.—Remote or secluded counties send but few emigrants into other parts of the country, nor are they much troubled by immigration, for they are not as readily accessible as others. The Local Element should consequently be strong in these counties, and being self-contained, they might increase in population at a high rate even, if there did not take place from them a considerable emigration to Trans-Atlantic countries. The counties belonging to this category are Cornwall and Cardigan, the Shetlands, the Orkneys, Ross, Caithness, Dumfries and Kirkcudbright, and perhaps also Elgin. Dumfries ought, perhaps, to be excluded, for it is a border county, and has, no doubt, sent numerous emigrants into England, where they were enumerated as "Scotchmen" merely. Cornwall and the Shetlands are the two typical counties of this class. They both exhibit the largest Local Element to be met with in England or Scotland, migration from them has been far below the average, and whilst the population of the Shetlands remains stationary, that of Cornwall is decreasing, a fact sufficiently accounted for by emigration to foreign parts.

In Ireland the following counties belong to the category:—Mayo, Kerry, Cork, Donegal, Leitrim, Sligo, Roscommon, Galway, Clare and Limerick. All these are counties in the extreme west of the country.

### CONCLUSION.

We are fully aware of the imperfections of this work, which are, no doubt, mainly due to the shortcomings of the author, and to his inability to master, unaided, such vast arrays of figures as are those presented in the Census Returns. To some extent, however, these imperfections are due to a deficiency of information on certain points, and as the time draws near for making preparations for the next Census, we venture to point out the following desiderata:—

1. A table showing the distribution of the natives of each county throughout the United Kingdom.

2. Details with respect to the birthplaces of the inhabitants of all towns of 25,000 inhabitants and upwards, distinguishing also persons born within the town from those born in other parts of the county.

3. Emigration statistics for one or more years, distinguishing the birthplaces of the emigrants.

4. A revised arrangement of the tables referring to foreigners, so as to enable us to distinguish persons of British parentage born abroad from persons of foreign parentage, irrespective of the political allegiance of the latter.

5. Additional summaries and proportional numbers.

6. A more economical arrangement of the facts presented, so as to render the Census Returns less voluminous and easier of reference.

7. An assimilation of "Registration Counties" and counties proper, a most desirable reform.

E. G. RAVENSTEIN.

## SKETCHES OF LIFE IN GREENLAND.

### KANGERDLUARSUK — A FORTNIGHT UNDER CANVAS.

ON a fine autumnal morning we were wafted over the smooth waters of the Kangerdluarsuk, a small fiord, yet large enough to exhibit every variety of tint, from the nearest greenclad hills, with their outlines standing out sharp against the sky, to the distant blue mountain-tops blending with the vapoury air. We had a gentle breeze, with light clouds gathering round the higher summits, which, notwithstanding the warm sunrays, imparted a chilly colouring to the scene. The wind being fair, both our boats made sail, and we floated like gulls on the top of the waves, our oarswomen the while bending forward and resting their arms on the oars in order to be in readiness if a sudden gust of wind should require the sail to be lowered, or if the ever capricious fiord-wind should unexpectedly die away. For my own part I always preferred the rowing to the sail; while rowing we were so much more convivial and gay, and therefore I never heard the order, "*Tingerdlaut evertinekassok*" (Make sail) without some feeling of regret, for if the girls (our crew) were engaged in singing either a merry song or a psalm, they presently would stop, and quite naturally, for though their work was perhaps easier, a stronger claim was made on their attention; and then it makes one nervous to be incessantly on the watch. To-day, however, we had an indisputably agreeable passage. We were bent on going to a delightful place that we had discovered the year before during an excursion in company with a large party to spend a pleasant day together. We now intended to go a regular trip into the country, and live for some weeks in our airy country-houses, viz., our tents. There were my husband and I; our little daughter, by the Greenlanders called Magida, who had been allowed to invite two little friends from the colony, the elder a Dane, the younger a little Greenland maiden. Finally we had an elderly unmarried lady friend, who partly acted as our housekeeper, but also was a lively pleasant companion, up to all sorts of fun. Besides we had our boats' crews, so that we formed quite a little settlement; and notwithstanding the separate domestic arrangements, we lived together on the most familiar footing.

The wind has by this time gone down, and, approaching the end of the fiord, we at length reached our romantic spot at low tide. I preferred it so, though it is much more convenient to land at high tide as regards the bringing up of the luggage and traps; but we could manage nevertheless. I liked so well the large white sloping rocks, with the seaweed attaching to the crevices, and then the shining beach with the myriads of little beadlike stones that dry in the sun the moment the water runs out, and on which it is such a treat to scramble about when leaving the boat. Nevertheless we do not dally there, but quickly ascend above the tide-marks. Here the ground was covered all over with the loveliest carpet of brown heather and mosses, interwoven with branches of birch and willow; on prominent rocks the willow crept ivylike, spreading over the stones.

The first thing to be done on arriving is to find out a nice place to pitch the tents, which should be as smooth and stoneless as possible; "*Tassane!*" (Here) we now called out, and presently one came running

on loaded with the cover, others brought the poles, while others again were busily engaged in collecting stones for the fastenings; altogether everybody knew his duty without being told. Magida, with her friends and the servant-maid, had immediately climbed the nearest hills, and were seen aloft already engaged in gathering the black heather-berries that taste so well. As soon as the tents were pitched, I fitted them out with the furniture we had at our disposal, such as boxes and cases of every dimension, which were turned into tables and cupboards, and all manner of sacks and bags served us as seats and chairs, especially the most important of them containing our down-beds. On landing at a new place one is always first drawn, as by magic, to the stream which reveals itself to you by its murmurs; and whilst we were furnishing the house, my husband disappeared, following the sound which did not mislead him, and on returning from his walk he said that he had been fortunate enough to find a nice little cave in the rocks, particularly well fitted for his photographing apparatus and implements (as it was his intention to take views of the country here).

We were now so far established in our new world that the heath-fire blazed from the improvised hearth on a little terrace-like hill to the left; a girl comes running down with water from the stream, and nothing is now wanting for the completion of our domestic arrangements but to look after the boats, and in another moment they are safely moored to some rock on the beach, or at anchor in our little haven. Our gipsy encampment was now complete, numbering three tents. Rocks and stones were strewn with the Greenlanders' luggage, scanty and poor, but still sufficient for their wants, consisting of a few bed-clothes rolled up in skins, a number of boxes, a good many boots, a tea-kettle, a pail, a pot, a pot cover, some dry fish, a piece of blubber, and other scraps and trifles. It is all lying there, partly because it has to be somewhere, but partly also to dry, as it may have got wet from spray of the sea, and the Greenlanders detest dampness. I have very often seen them wet to the very skin in their only dress, and yet considering themselves quite happy when it could not be helped, but if they have a chance of drying their damp things they do so without delay. Housekeeping is commenced and dinner is laid out on the largest box. Our cook, Elisaus (a man), had been busy from early dawn, long before our starting from the colony, preparing different dishes in order to have less trouble in the New World, at least on the first day; and it was well for all of us, as we really were in need of refreshments without too much delay. Now he stands on the watch at the fireplace, waiting for the kettle to boil, and presently calls out to me, or rather to anyone who would mind him, "Now the water is boiling!" and not mistaken in his trusting to my keener perception of the fact, he sees me directly make my way to the tent, and soon after again emerge with the coffee-box, which I give over to him. My next duty is to deliver to our helmsman the bag with the crew's provisions, and at the same time tell him how he has to share out the portions; and our sojourn in the Kangerdluarsuk Fiord has actually taken its beginning under the most favourable auspices, and is to be continued in uninterrupted harmony. Those of the Greenlanders who more especially belonged to our household, such as the cook, the nurse, and the servant of the boats, are at liberty to enter our room at their own pleasure, but of course they only make use of this prerogative in our own interest, that is, when they have any work to do for ourselves; whereas, on the other hand, the tent of the Greenlanders during our stay is considered common property; our children went out and in unceremoniously at any time, either to have some fun or a national dish when the inmates were present. Very often they were not indoors, but would be found encamped in the grass round the fireplace, and even I often joined them, tempted either by their merry laughter or beautiful singing (the colony Greenlanders are such a singing lot!) All over Greenland people are fond of music, but still our own colony Greenlanders are the best singers, having more opportunities of hearing European songs than those living in more remote places. At such times I dropped my work, my knitting, embroidery, or perhaps drawing, and went out *pularing*, that is, paying a visit at the other tent. There were no formalities either on part of the guest or the hosts, perhaps some slight excuse for the want of a nicer sitting-place for me, perhaps none at all, as I was considered rather popular among them, maybe because I had spent my childhood in their country. Anyhow, we were on very familiar terms, as I was favoured in so far as, unlike most Europeans, I dare say, to be considered a bore or spoiler of their merrymakings, which they always acknowledged in such words as "*Taunanguak itornangilak*" (She is such a dear, we need not mind her), the real meaning of which is, "She won't mock or rally;" and they were quite right—I never did. I am so fond of the amiable people who were always so kind to me, and whom I can never bear to hear termed beasts or savages, although I am quite aware of their deficiencies and shortcomings.

Presently we are among my old friends in the tent. Here the women are seated on the ground, the upper part of their bodies bent forward and their feet stretched out; just behind them, spread on a skin, are their beds, if they happen to have any; close beside them stands a box with their other trifling belongings, such as a comb, a few sewing implements, bits of coloured ribbons, and other odds and ends; at times they are busy sewing; mending soles, for instance, is a matter of great importance in Greenland, especially on a journey, or patching their easily torn birdskin jackets; but often they sit in their favourite attitude, almost bent double, resting on their elbows, doing nothing. The men either stretch themselves at full length on the moss floor, or sit in the same position on their little boxes, with pipes in their mouths; and now the chatting grows lively, either in a simple narrative style, or else in a merry bantering strain, and they often laugh quite immoderately at the most nonsensical remarks or even at vulgar witticisms, which, however, from the lips of such children of nature never left any strong discord in my mind. In the bantering line the women took the lead, and their tart remarks often cleverly hit the weak points of their masculine companions. If, on the other hand, the conversation happened to be of a more serious turn, it was carried on by the men relating what had befallen them on their excursions, the topics usually being hunting and *kayaking* adventures.

To our principal entertainments, as I mentioned before, music belonged. We did not merely confine

ourselves to vocal performances. We always brought an accordion and a violin, a *supputasak* and an *aggiak*, along with us. Everybody could perform on the *supputasak*, and in most cases one or two of the crew could play a few melodies on the violin. However, I am quite forgetting our dinner, which has been on the table all this while; our lady companion, Mrs. L., and the little Dane, Emilia, are already seated, one on a box, the other on a bag containing boots and skin clothes; our *patriare*, my husband, occupies the comfortable seat I always arranged for him out of the large bag with bedding. "*Magida kaile!*" (Please call Margaret!) "*Magida-gok!*" (Hark! they want Margaret to come!) was echoed over the place, and before long the child returned, dressed half Greenland, half European fashion, black to her very ears with the juice of the berries, laden with flowers and more berries in cups, bottles, perhaps even adopting the national mode of filling a boot with them (which was, however, interdicted); and, with looks radiant with joy, she would go on to tell of the unlimited abundance, looking back at her nurse, "*Olouisa ilâ?*" (Is not it true, Louisa?) "*Illa illa!*" (To be sure, and so it is!) The latter had entered the tent with the child to remove the hood of the little Eskimo jacket from her nursling's head, and put her on other boots; for, as you will already have observed, boots are in my native country considered objects of great importance—and so are children, and that is why they get rather too much petted and not a little spoilt. As regards attendance, they are indeed too much looked after and taken notice of! Louisa soon disappeared, but presently again put in her light-haired head with the trim top-knot, and in her pleasant cheerful voice inquired whether they were to be off to the hills again when Magida had finished her dinner—"Ah, yes, by all means!" M. had soon finished, and as we were not particular with regard to table etiquette in Kangerdluarsuk, it was not long before we were left to ourselves. The things were now quickly put back in their proper places in divers boxes, and the cook was called to take outside what had to be cleaned, so that in a few moments our dinner-table—viz., the cover of the largest trunk—was transformed into a work-table, although not used as such on this first day; we had other business to mind: after dinner we were to look over our large estate; my husband had some of the people to go with us, carrying his photographic things, and at once set up and arranged his atelier in the before-mentioned cave.

Now for the country itself! A lovely stream divided our valley, which was inclosed by high mountains on three sides (to the right we had the sea or rather the fiord). From the opening of our tent we had the grand view of a lofty mountain with its majestic crests of ice. Here our stream had its origin, so at least we concluded, from tracing its course for miles upward through distant lakes. At our lowest terrace it fell through a crevice in the rocks, forming a splendid cascade, afterwards running along softly, as a gentle stream, until at last, expanding and branching into several scanty rivulets, it emptied itself into the bay behind our tent. We followed its course to the upper terraces till we got quite tired, corporally only, for mentally we never could tire amidst such beauteous scenery; here we again had blue mountains in addition to the first ones (our own from down below)—other valleys, "Staubbachs," and ever-varying splendours. A solemn grandeur was reigning here, as in so many other places, of Greenland, on account of the exceedingly impenetrable solitude; for whose benefit was it made?—for what purpose is it there?—this vast country in the Kangerdluarsuk? which is only to be considered as one of perhaps thousands of similar sites on this extensive coast. Here we roamed over moss and heather, springing from stone to stone, climbing rocks and crossing rivulets, now silently admiring, and now again bursting out in grateful admiration, all the while pondering over our plans for the coming days, as we intended to stay here for awhile. We both brought sufficient materials for work with us from home, as we wanted to improve our time, and we did work, in a regular sort of way, every day, my husband in the photographic line, which gave him enough to do, as it is not an easy matter in Greenland, and he wanted to take many of the various views. I was partly engaged in making bad sketches, which were afterwards completed into something still worse at home, but nevertheless had a striking effect when afterwards presented as Christmas gifts. I also assisted my husband, but this being no independent work, I did not much like it, except in so far as to help him; besides it was no easy matter to be running far and wide with the plates, and to get the camera placed exactly as he wanted to have it; sometimes a large stone would be in the way, sometimes the ground sloped too much, and during this preparatory arrangement the fear that the plate in the meantime would be getting too dry, made the assistants quite nervous.

It was a sultry clime this, though not South Carolina, and we had to toil away nevertheless! In Denmark we say: "The workman is worthy of his hire;" and in the evening we were fully recompensed, the same interesting results delighted us both alike. (I have not yet mentioned that my husband's principal assistant was a young Greenlander whom he had himself educated and given lessons in the photographic art.) When, after strolling about all day in order to gratify our ambition, we fairly landed in our tents, we all seemed very happy, and proceeded to examine the negatives, which gave us great satisfaction; and after having looked them over several times they were with great care put by in a strong little box, not to see the light until they were to be copied at Godthaab, in order to be formed into positives. Those we still possess, and in the contemplation of which I often conjure up a happy past. After this we would read a little while in our novels, as we had still some time left before tea. Miss L. then made the children's bed in her tent, and often I chose this particular hour for my tent-calls, but to-night the people are all outside encamping round the fire which is continually replenished by two women, one cooking salmon for the crew's supper, the other boiling water for our tea; the whole scene stands fresh in my memory. There are Anekasik and Elisaus, Lars and Akaluk grouped on the moss, their heads supported by their hands (a favourite position with them); outside their tent Susanette is busy putting right to-morrow's boots for us all; still many things, belonging either to the crew or ourselves lie strewn about covering stones and moss. These things may as well remain outside, as there are no

thieves in these tranquil parts, excepting maybe a little fox at midnight time! A hunter is coming downhill carrying a bunch of fowls at the end of his rifle, Adam is returning from the stream where he has been spearing salmon; opposite, in the golden rays of the setting sun, appears Louisa with the children still further enriched, all laden with their stores in pails, cups, and handkerchiefs. It was quite a tableau in the tranquil solemn night!—tranquil, but not silent, for we were still chatting and merrymaking. Again, "*Kalalerpak!*" (It is boiling!) and once more we disappear behind our cotton walls, with the steaming tea-kettle following, to be placed in the centre of the ground on a slab that was always brought and taken away with it; we again sit comfortably and sociably together, and through the half-open door we get the scent of the burning juniper, and enjoy the sight of its blazing flames amidst the fresh national life in the beautiful scenery, while we are sitting down to our last meal. There, it is finished! "Now, Louisa, come, come and help with the bags!" (that is, make the beds on the moss).

During these preparations my husband was standing outside, gazing attentively at the sky, taking note of the scud in order to guess from the direction of the wind what weather it would be to-morrow; of course, we were very anxious for fine weather. The children were undressed, eating berries continually. Whilst I was still engaged in helping them to bed, I was suddenly called outside just to have a look at a couple of fine eagles that came soaring through the air, and to our utter amazement they sat down on a large rock not far off; and is it not very strange that for several days that proud couple returned and condescended to take a little rest just in the same place where we saw them alight the first time? We got used to them and longed for them, but one evening they cheated us by staying away. "*Peroordlugo*" was our last mild word of command from inside, at which our steersman or one of the women or some one officiously came running on to help in closing the door from the outside; and, "*Sinit dluarise!*"—(Good-nights) then sounded to us, and now all became still, excepting the never-ceasing concerts of my dear native country—the roaring of the sea and the foaming cascades, the rippling sounds on the mossy ground, and the gentle murmurs of far-away streams; such music always lulled us asleep, and during the fortnight passed in Kangerdluarsuk we almost every day awoke and found a splendid morning!

Sometimes we received visits from the colony, more frequently the visitors were kayakers, but it also happened that a boat came to see us; I once remember a visit from the doctor's family. We were, of course, very happy to see them, and have a pic-nic with them; they brought delicacies from Godthaab, and we regaled them with our fine salmon; we had a luncheon or an early dinner—we may give it any name—and then an excursion was proposed. We had on one of our walks discovered a lovely waterfall which we intended to immortalise with the photographic apparatus, and we now intended at the same time to show it to our visitors, and take a view of it. Consequently we started caravan-like, the Europeans carrying no luggage, but the Greenlanders loaded like camels. The way, as usual, lay partly across stony hills and fertile slopes, but partly also through sandy tracts (very properly so for camels!), over empty, dry river-beds, as well as over foaming little rivulets, the crossing of which causes a great deal of fuss and alarm to the maladroit, and on the other hand is a great source of amusement to the cleverer folks. Ascending the heights is to many Europeans a great inconvenience, so we often halt and sit down, sheltered by some rock, to gather the roots and berries that happen to grow within our reach; as soon as the gentlemen have had their florid complexions sufficiently cooled, they produce their cigar in order to waste no time that can be so pleasantly improved. In this wise, on all such climbing and scrambling excursions, we were always in high, good spirits, always inclined to sing, and very often we did sing the English emigrant's song, "Cheer, boys, cheer, for the new and happy land!" (This song, as well as others, having been brought by English or American sailors, who are no uncommon visitors in Greenland). The day mentioned we were sitting high up on a sunny slope, with icy mountain crests far above us, and the shining surface of the far-stretching sea with its myriads of islets, below. The sweet smell of the various flowers is coming to me as from the paper—temptingly! I long for the dear little Polar *nasuts*, "what grows," viz., flowers—the bluebell, the red one with the sweetly strong smell and the almost leafless stem, the bright little buttercups which only grow in the sands, the pretty blue star and the many varieties of white; finally the dandelion and the queenly angelica. There is no place like home! I am now living in Europe, in Denmark rather, happily, so that I cannot exactly say that "the world am sad and dreary"; still I must confess, in sympathy with the old nigger whose words I am quoting, that

> "My heart very often grows a little weary,
> Far from the old folks at home."

The waterfall was reached and admired alike by guests and hosts; it was a very broad one, flowing rather than falling crystalline over regular terraces, yet now and then foaming into precipices which we suspected from distant roaring sounds, and had another time confirmed by tracing its course.

S. N. R.

## ALONG THE TURKISH BORDER.

### PART I.—BULGARIA.

THERE is a time-honoured story of a military outpost in the Far West, the soldiers of which were wont to display the one presentable uniform which remained to them, on the back of the sentry, while his raggeder comrades remained carefully indoors. A similar policy has been pursued from time immemorial by Turkey, Persia, Roumania, Servia, and other Eastern nations—the very few educated and gentlemanly men whom they possess being sent abroad as envoys and accredited agents, while the tattered, filthy, bigoted, murderous savages that compose the bulk of the population are kept snugly hidden away at home. The first Servian whom I ever met was one whose appearance might have redeemed the character of the entire nation—the venerable "Patriarch" himself, the head of the National Church. Seated at a ministerial dinner-table in St. Petersburgh, with the lamplight

falling on his grand, high forehead and long, silky hair, and sparkling in the golden crucifix which hung upon the breast of his flowing robe of brown serge—so picturesque in its simplicity amid the glittering uniforms around it—he might well (could any ignorance have been profound enough to accept him as a fair specimen of the race which he represented) have left behind him a lasting impression in their favour, and returned home crowned with yet more liberal offers of assistance than those which he actually received.

But let any untravelled reader who may have a prepossession in favour of either the Turk himself, or his motley enemies beyond the Danube, start from Constantinople in a north-westerly direction, across Roumelia and Bulgaria, so as to strike the Lower Danube at Rustchuk—and thence let him lead up the stream, past Sistova and Widdin, as far as Baziasz—and truly he will hear of (and see) something not at all to his advantage! Roumelia itself, the most thoroughly Turkish portion of all Turkey,* is bad enough, with its burning plains, its indescribably filthy villages, its forests of wild grass rising to the height of a horse's girth, its sullen, heavy-looking, unhelpful inhabitants, and the air of desolation which settles down upon it like a pall, as soon as the beautiful seaboard is left behind; but when we cross the great ridge of the Balkan, and find ourselves encompassed by the bare uplands, and sandy wastes, and hideous swamps of Bulgaria, our disgust increases tenfold.

In such a region, it is easy to see why, in 1828-'29, the invading army of Count Diebitsch—though opposed only by an enemy whose treasury was utterly drained, whose fleet had just been blown to pieces at Navarino, and the flower of whose army (the famous Janissary Guard) had been massacred by the Sultan himself, in the fatal Et-Meidaun, at Constantinople—took nearly two years to force its way down to Adrianople, with a loss of more than five thousand men per month, without firing a shot, during the greater part of both campaigns. What an ordeal they must have had to pass through, those iron men, toiling wearily over these endless alternations of steppe and hillside, dragging their heavy cannon under the scorching heat of a Turkish summer, and halting every now and then to fight a battle like that of Shoumla, where, "after eight hours' hard fighting, the Vizier continued his retreat unmolested, the Russians being too much exhausted to pursue him." Few more memorable exploits have ever been achieved; but the chief interest of the campaign to Englishmen lies in the fact, that among the survivors of that dreadful march, the line of which was whitened by the bones of more than one hundred thousand men, was a young cavalry officer destined to figure prominently hereafter in a yet more famous struggle, and to achieve a sad celebrity as Lord Lucan of Balaklava.

I shall not easily forget my first day's experience of a real Bulgarian swamp. The wide, dreary expanse of desolate morass, looking vaster and drearier than ever under the fast-falling shadows of night; the scattered tussocks of green, spongy turf, alternating with black sullen pools, from which the white fever-mist curled upward like rising steam, as the red sun sank toward the horizon; while at times there started up with a hoarse bellow, out of the oozy slime, the huge, black, shaggy head of a buffalo, showering a spray of thick clammy mud in every direction. And beyond this, again, bleak hillsides and dark moors, upon which, for miles together, not a living soul is to be seen. Indeed, but for the evidence of the Varna-Rustchuk railway (which, after all, is little to boast of, being laid on beds of shifting sand, which are gradually slipping away from beneath it, and leaving it to fall to pieces by degrees), the traveller through Bulgaria might well imagine himself back again in the stern old times when the "black Bolgari" planted their spears around the log-built palace of their "great prince,"* and flung the heads and hands of their Christian captives to the dogs that prowled around his door—before the hosts of the Emperor Basil swept the land as with the scythe of destruction, and left the name of "Bulgarian forest" to be a byword of ravage and ruin for all time to come.

The once formidable Bulgarian has indeed fallen very low. In his very superstitions there is a lowness, a coarseness, an absolute brutality, unique even among the degraded races of Eastern Europe. The Russian myths—horrible as many of them undoubtedly are—have a vastness of power and energy even in their worst horrors, which gives them a kind of gloomy grandeur; but when a low-browed Bulgarian peasant, pointing to a lonely burial-ground far out on the bare hillside, tells you, in a fearful whisper, that if you go there at midnight, at the time of full moon, you will hear the unquiet dead rooting and gnashing in their graves like swine, deep down below; and that, should you open their tombs, you will find the shrouds and the sides of the coffins all torn and hacked as if by gnawing teeth; then, indeed, you feel that in the supernatural, as in the natural, world you have reached the lowest depth of degradation.†

Yet these creatures—lazy, dirty, ignorant, superstitious, half-beggar and half-brigand, destitute of even the commonest appliances of civilised life, from whose pestiferous hovels you are glad to escape as soon as you have entered them—are as proud of their race, and of their ancient renown in war, as the bluest-blooded hidalgo in Spain. Well do I remember the scene which I witnessed in a small Bulgarian town in the autumn of 1870, when the news arrived of the crowning triumph of Sedan, and the capture of the Emperor Napoleon. Amid the general burst of admiration, a big, shock-headed, beetle-browed fellow, who stood beside me, growled out, with a sincerity of delight which no one could mistake:—

"Ah! what brave fellows those Germans are! *They must have Bulgarian blood in them!*"

The usual mode of reaching the Danube from the interior of Bulgaria is by the railway which connects the Black Sea coast (at Varna) with the great Danubian fortress of Rustchuk, the defence of which, in 1810, against the overwhelming forces of Kutouzoff and

* In the famous compact at Tilsit, in 1807, between Napoleon and Alexander I., it was agreed that, in the partition of Eastern Europe, Roumelia and Constantinople should still be left to the Sultan.

* The Bulgarian was the most short-lived of all the early European monarchies. A single century saw its glory and its fall.

† The loathsome "Vampire" superstition is intensely strong in Bulgaria, as also in Greece and the Principalities.

Boulatoff, was one of the most gallant achievements of the Turks on their own ground, and a kind of prophecy of the desperate defence of Silistria forty-three years later. But any one who wishes to form a complete idea of the Danube, and to decide from personal observation upon the merits of the "debateable land" for which Turk and Christian have been cutting each other's throats for upwards of half a century, cannot do better than take passage in one of the small trading steamers which ply from Varna to the port of Sulina, at the only navigable mouth of the Danube (touching *en route* at Kustendji), and thence proceed up the river by the Constantinople and Vienna passenger boats, as I did.

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### PART II.—SERVIA AND ROUMANIA.

THE estuary of any great river is usually the least inviting part of its course, and in point of sheer offensiveness and unsightliness, I should be hard put to it to make a selection among the respective deltas of the Rhine, the Volga, the Nile, the Syr-Daria, and the Mississippi; but the worst among them all has nothing more hopeless to show than the miserable dotage into which the grand old Danube sinks in the last hundred miles of his career. And the vestibule of this dismal panorama is as dreary as itself. The only thing worth seeing about Sulina is the magnificent pier which has lately been built for the protection of its very insecure harbour. As for the town itself, the worst batch of rickety booths ever knocked together on a village green, the night before a fair, would be palaces compared with the filthy shanties that compose it; and its surroundings are in perfect keeping with itself. Mud, water, and mosquitoes—mosquitoes, water, and mud; slimy pools of stagnant ooze, clumps of coarse rank grass, fathomless depths of black quagmire; a foul beer-coloured stream winding sullenly through the midst, along whose flat, swampy banks a few gaunt, leafless trees shiver as if *they* too were stricken by the all-pervading ague—such, for miles above Sulina, is the panorama of the "historical Danube"!

But as we approach Toultscha, the ground becomes drier and firmer, the banks rise higher, and the far-off green hills, with a stray gleam of sunshine upon them every here and there, make as goodly a show to our eyes as the distant view of the Delectable Mountains to those of poor Christian, while floundering hopelessly in the Slough of Despond. The town of Toultscha itself, with its white houses cradled in the lap of a bold grassy ridge, and the gilded cupola of its great church glittering in the sunlight, forms a pleasant little picture. And now, on either side of the winding river, come glimpses of yellow corn-fields and green meadows, with here and there a tiny log-hut clinging to the bank like a limpet; and as we near Galatz, a long gray band of solid masonry, from which the narrow eyes of the loopholes peer cunningly out, looms shadowlike along the shore ever and anon—entrenchments which, though now manned by fez and blue caftan, instead of flat cap and grey frieze, still remain as silent witnesses of the time when "Nikolai Pavlovitch" came marching gallantly into the Dobrudscha with sixty thousand soldiers at his back, bound on that fatal crusade which was one day to cost the lives of half-a-million brave men, and his own likewise.

Galatz and Ibraila (called Brailoff by the Russians), lying within 12 miles of each other, form a kind of centre of local traffic, through which passes a pretty brisk trade in corn, fruit, and what not, likely to be considerably increased by the railways which are now striking out from them into the heart of Roumania, and bringing the Danube into direct communication with Bucharest and Jassy. But both places look strange on Turkish ground, from their perfect likeness to the other towns which one sees *beyond* the border, upon the hostile soil of Holy Russia. Place the Wallack peasant beside the Russian mujik, and what do you see? Two sallow, beetle-browed, slouching men, with heavy expressionless faces, attired in long loose frocks, and heavy boots reaching to the knee. The straight, wide, dusty streets, the vast desolate squares, the enormous market-places lined with rows of tiny booths, which one sees in every Danubian town from Giurgevo to Toultscha, might be transplanted, without the alteration of a single feature, to Moscow, or Kiev, or Nijni-Novgorod; and the square whitewashed churches, surmounted by green cupolas and gilded crosses, that look down upon them, are the same in every point as those in which the "Pravoslavni Narod" prayed for deliverance from "Tsar Napolevon," or sang Te Deums over the victory of Sinope.

But there are surer tokens here of Russia's former presence than the mere general family likeness which the works and ways of all the Slavonian races bear to one another. On the crest of the high ridge that looks down upon Ibraila, where the huge melons sun their jolly round sides along the warm southern slope, stands up against the sky a tall obelisk of gray stone, on the top of which perches, with wings outspread, the double eagle of Russia. The four sides of the basement are adorned with Russian inscriptions in gilt letters, commemorating the narrow escape of the Emperor Nicholas during the siege of the place in 1826—its capture—the march of Count Diebitsch through Bulgaria—and the treaty of Adrianople in 1829. And, deep below, enriching with his best blood the soil of the enemy's land, lies many a brave lad for whose return loving eyes have watched in vain on the sunny hillsides of the Volga, or the gray moorlands of the Don. Outcasts from native Russia, in the heart of a region whence the power of the Czar has long since passed away, under the dominion of a race which curses and spits at their very dust with unquenchable hatred,

> "Far from their leafy northern home,
> The bearded horsemen lie."

And now onward up the stream, past Silistria, and Rustchuk, and Giurgevo, and many another place famous in the history of the last Russo-Turkish war, till at length the bold ridge which overlooks Widdin, and the white walls and clustering houses of the celebrated fortress itself, rise before us against the purple sky of evening, awakening memories of a little pug-nosed grimy man, in threadbare shirt and trousers, whose name was a sound of terror throughout this whole region, eighty years ago—for that name was Alexander Vasilievitch Suvoroff.

And here it is time to halt and look around us; for at this point Wallachia ends and Servia begins—Servia, the sworn foe of the Crescent for more than four hundred years, the ally of Hunniades, and Alexey Mikhailovitch, and Alexander the First—the enemy which, at the opening of the present century, clung like a wolf-hound to the side of Turkey for eleven fierce years, while Russia stabbed her in front—and who is now endeavouring to repeat the attack, true to the merciless creed that "the Turk's entanglement is the Serb's opportunity."

Nevertheless, the conditions of war are not what they were in 1810. However assiduously Russia may stir the fire in secret, she has hitherto shown no sign of active interference; and, odds apart, the moribund "sick man" can still be dangerous at close quarters. The Turkish soldier, *per se*, is as fine a piece of fighting power as any in Europe; and, could he but be well fed and well officered (which, under the present mal-administration, he never can), Turkey would have little to fear from the congregated jackals of the Danube. Servia has not now, as she had then, forty thousand Russian bayonets in her van; nor has she a general like Czerni Georgii * (Black George), he who "took Nissa and Schabacz, and drove out the Osmanli dogs from behind the guns of Belgrade." In a word, the really dangerous element to Turkey, in the game which is now being played in the East, is the Montenegrin—the untameable mountaineer, "to whom the clash of sabres is as sweet music, and the reek of battle as sherbet on a sultry day"—already conciliated by Russia's courteous reception of his young prince a few years since, and ready at any time to "eat the flesh of the Turk raw."

But in any shock of actual warfare, there is *one* circumstance that must always tell fatally against the Turkish empire. History has produced many instances of states possessing what one may call a barrel formation—in which the small minority of a dominant race hoops together a bundle of diverse and jarring nationalities. Such was the empire of Charlemagne in the ninth century; such was the Latin kingdom of Jerusalem three hundred years later; and such are Austria and Turkey at the present day—more especially the latter. Five millions of Muhammadans, upon whom the whole burden of the military service falls with crushing weight, are striving to hold together an incongruous mass of Serbs, Bulgarians, Wallacks, Greeks, Armenians, and what not; and the moment that the encircling hoop gives way beneath a sudden blow from without, the loosened staves will fly asunder, and the whole fabric tumble to pieces at once.

To whom the guardianship of the Danube must fall, when its keys drop from the relaxing grasp of the Osmanli, there can be no doubt whatever. One hundred and six years ago, Count von Kaunitz, the Premier of Austria, wrote thus to Frederick the Great: "The encroachments of Russia upon Turkey are dangerous to the peace of all Europe. Her Imperial Majesty of Austria can never consent to the possession by Russia of Moldavia and Wallachia. Such views are dangerous both to Austria and to Prussia, and the only effectual remedy is, that Austria and Prussia unite in absolute prohibition of them."

Thus it was that the position of Austria was understood by those who guided her movements as long ago as 1770; and now that she has been hurled headlong out of Germany by the fatal blow of Sadowa, and changed at one stroke from a Teutonic to a Slavonic Power, the great statesman's emphatic dictum becomes doubly undeniable, and the necessity of obeying it doubly pressing.

DAVID KER.

* This brave man (whose real name was Georgii Petrowitz) was captured by the Turks in July 1817, and executed with circumstances of great cruelty.

## AN ITINERARY FROM AKSU TO YARKAND AND LADAK.*

THE frontier authorities of Orenburg and Western Siberia have at all times been in the habit of collecting information on the neighbouring countries. The material thus collected was deposited in the provincial Record Offices, where it was consulted, occasionally, by inquisitive travellers. One of the most valuable collections of this kind was that made by Gens, a frontier superintendent at Orenburg, who examined every traveller returning from Central Asia. A similar collection is in the hands of L. N. Zobolef, who has served for many years in Turkistan, and resides now at Orenburg. Minor collections are to be found in every Record Office near the frontier, and some of these have been consulted by Nebol'sin, Golubef, Helmerssen, Grigorief, and others. One of our travellers, M. G. N. Potanin, has recently communicated to me the abstract of a document discovered by him in the Central Record Office of Western Siberia, numbered 1153, and entitled "On the Frontier Trade in 1824-28." Potanin's discovery reminds me of what happened to me at the Record Office at Omsk. In 1859 it was resolved to throw away original route surveys by Nazarof, Telyatnikof, and others, a large MS. map of the district of Naryn, by Nifantef, and many other old and therefore "useless" drawings. Some of these drawings I was able to send to the Geographical Society, but I do not know what has become of the others. Amongst the things thrown away as "useless," I found a MS. volume containing the unpublished descriptions of the frontier by Kolychef, Glazunof, and others. A MS. description of Kiakhta, which I discovered in Eastern Siberia, was forwarded by me to the Society. Indeed, it strikes me as very desirable that the Record Offices of Siberia should be carefully overhauled. They contain valuable geographical materials dating from the eighteenth and the beginning of the nineteenth century. Our officers were in the habit then to collect information on the countries of Central Asia, but they placed their lights under bushels, and treated their discoveries as secrets of State. Russia and Science have no doubt been the losers in consequence of this secretiveness. I now communicate the itinerary given in the document recovered by Potanin:—

* From a paper by M. Venyukof, *Istvest. Russian Geographical Society*, xii., 1876, p. 222.

### A.—AKSU TO YARKAND.

Versts.

*Aksu*, in Eastern Turkistan.

20 Aikul, village, with Karaul. Fields and pastures along the whole of road. Fruit-trees occasionally.

25 *Yan Aryk*. Fields and pastures irrigated by canals from the Aksu river extend for 20 versts.

40 *Dyuchut*, village. Neither fields nor pastures. The inhabitants provide themselves with corn from the neighbouring villages. The river at Dyuchut* is narrow and deep; fish are caught in it. There is much "turunga" (*i.e.*, poplar) forest. The frontier between Aksu and Yarkand is crossed.

25 *Otus Kyuina*, village. Trees and pastures abundant, but no fields.

20 *Karaul Kynraku*, guard-house. Wood and pastures abound. No fields. Country level, rather sandy. Water supplied by a canal derived from the Kashgar darya, 10 versts off.

25 *Karaul Kokchul*. Wood and pasture abundant; water in wells brackish (bitter?)

30 *Karaul Baichuk*.† Wood and pasture abundant. Water from wells. The Kashgar darya is 5 versts from Baichuk.

30 *Karaul Jida*. The road forks, on one hand to Kashgar, on other to Yarkand. Water from wells.

28 *Karaul Sary-kunysh*, Forest and pasture. The river Sarkunuch flows through.

30 *Karaul Shamalu*.‡ Wood and pasture. Level country. Water procured from the Yarkand darya.

30 *Karaul Aksik-maral*. Wood and pasture abundant. Road sandy. Water from Yarkand darya.

30 *Karaul Ala Aigyr*. Level steppe. Wood and water abundant. Water drawn from the Yarkand darya. Agriculture carried on in village.

25 *Karaul Lailyk*. No fields along road, but near the settlements. Wood and pasture sufficient. Road sandy.

30 *Karaul Terek Lenger*. Fields only near settlements. Wood and pasture abundant.

30 *Yarkand*. Road very good. Fields in environs. Pasture, wood and water.

418 versts = 240 geographical miles.

### B.—YARKAND TO LADAK.

20 *Karaul Chigich*. Road practicable for carts. Fruit and other trees; fields. Water from canals derived from the Yarkand darya.

25 *Charsymaku*, village. Road level. Trees, pastures and fields. Water from canals derived from Yarkand darya.

30 *Bish-terelu*,§ village. Same country. Good water from springs. Pastures.

30 *Karaul Kuk-Yar*.§ The last Chinese guard-house. Pasture and fields along road. Fuel sufficient. Water from canals, derived from a river 15 versts off.

25 *Ak-mechet*.§ The road no longer practicable for carriages, owing to the mountains. Merchandise is carried on ponies. Soil stony. The mountains called Ala-tau. No fuel, and dried dung used instead. No water; snow and ice are used during winter, and the snow-water in the spring. There is some pasture.

26 *Chigylyk*.§ Cross the sandy Toina dawan, a very steep mountain. Fuel, pasture and water.

20 *Tallykh*, on the Yarkektu river, an open place with fuel and grass.

20 *Mazar*.§ Tomb with monument, within which the tails of yaks are suspended. The country is open. Grass and fuel sufficient. Water from Yarkektu river.

25 *Toby*. Fuel, water, and grass.

2 (?) *Tizeklyk*, on Yarkektu. The road leads through the Ala-tau. Fuel, grass and water. Fuel is collected here for use at the next three stations.

25 *Osha gans*. The road leads over the *China dawan*,* a high, stony mountain, the air of which is oppressive and injurious to men and beasts. Snow remains throughout the year, and ice also is found. Road very difficult. No grass, and travellers carry barley with them. Water is obtained from a small spring.

20 *Kulan-uldy*.† The road leads over the same mountain. The air oppressive as before. Neither grass nor fuel, but water in a mountain stream named Shaik.

30 *Kirgiz-Yangyl*. The Black Khirgiz once fought here with the Chinese, and there is a stone fort, called Kurgan. Fuel, but no grass. Water from the Shaik rivulet, along which the road leads us.

25 *Bukhar-uldy*, on the same mountain and rivulet. Travellers provide themselves with fuel here for the following eight stages. No grass.

25 *Tagany*. Road along same mountain and rivulet. Air equally oppressive.

25 *Kajaluny*.† Road same. No fuel or grass.

25 *Ak-tag*.† Road over same mountain, but air even more difficult to breathe. Human beings are not able to swallow their food. No fuel or grass. Water procured from a spring below, of the so-called Chishmi.

30 *Darbazy-Siryeut*. No water, but occasionally ice. Neither wood nor grass.

30 *Baransa*. Road along same mountain. Air oppressive. No fuel or grass; snow-water.

30 *Second Baransa*.† The road leads over the *Kara-kuran*. The ascent is 15 versts, the descent also 15 versts. The snow never disappears, and during winter ten days are required to cross it.

25 *Yapchan*. The road leads over the Ala-tau. Air very oppressive. Springs. No fuel or grass.

30 *Khundan*, on same mountain. Spring. No grass or wood.

30 *Sasyr*.‡ On same mountain, on a rivulet. A little fuel and pasture.

30 *Chantam*, on the Shamsu river. Bad forage; very little fuel.

35 *Kuteklik*, on same river. Fuel, but no forage.

25 *Yar-tyube*, on same river. Fuel, but no forage.

30 *Myandalik*. Water and fuel. No forage.

35 *Dyunshailyak*. Fuel, forage and water.

30 *Chun changel*. Ditto.

25 *Bagry*. Water and fuel, but no forage.

30 *Karaul Yapchan*, the first guard-house in Tibet. Water and fuel, but only little pasture.

30 *Karaul Akhkem*. Water and fuel, but little pasturage.

30 *Sabyr*, village. The Diger davan has to be crossed between Akhkem and Sabyr. It is always covered with ice. It is crossed on cows (yaks).

25 *Tyubetyu*, town (Ladak). Water. Dung used as fuel.

— Very little pasturage.

910 versts = 523 geographical miles.

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* Probably a canal derived from the Kashgar darya. *V.*

† Maralbashi or Barchik on Captain Trotter's map. *Ed.*

‡ The names of the stations from here to Yarkand hardly differ from those given on Walker's Map of Turkistan.

§ Besh terek, Kugiar, Ak Masjid, Chiklik, and Mazarkhoja are places on Walker's and Trotter's maps which correspond to some of those given above. The Yarkektu is the Tiznaf.

* The China dawan is the Yangi dawan of English explorers.

† The stations of Kulunaldi, Kufelang, Aktagh, and Brangsa of Walker's map correspond to some of those given above. The Shaik is the Upper Yarkand river of the maps; the Kara kuran is the Kara koram—usually, but erroneously, called Kara-korum—according to Klaproth and the English maps.

‡ This is Sassar of Walker's map, which contains also the whole of the following stations; as does also Klaproth's.

## THE STATISTICAL SURVEY OF INDIA.

THE Statistical Survey of India, organised under the general direction of Dr. W. W. Hunter, has now been in progress upwards of five years, and the statistical accounts of the different presidencies and provinces are so far approaching completion that there is every prospect of the new *Imperial Gazetteer of India* being commenced on the 1st of February, 1877. Dr. Hunter has prepared an interesting report on the subject, and we now propose to lay the gist of his remarks before our readers.

The organisation of a Statistical Survey of India was sanctioned by Lord Mayo in 1869. But during the century preceding there had been numerous efforts after the same object, and the results of these different surveys formed a vast storehouse of unpublished information scattered over different provinces. In Bengal the first effort of this sort dated from 1769, or precisely one century before Dr. Hunter's investigations commenced. For Madras a magnificent series of 200 manuscript folios, known as the Orme Collection, was compiled between 1740 and 1770, and, with the exception of portions utilised in Orme's two printed volumes, remains inedited to this day. The Bombay Government created a distinct department, and Colonel Sykes, as Statistical Reporter, drew up a mass of papers, which, with previous documents, furnish a continuous picture of that presidency since the establishment of British rule. In the case of minor provinces, like Mysore, Travancore, and Cochin, the investigations had been even more carefully carried out. In fact each conspicuous period of administrative improvement or reform has left behind it the traces of a fresh inquiry into the state of the country.

For instance, in 1769, when English officers were first appointed to the Bengal districts, the President in Council issued an elaborate circular, calling for information respecting the political, ethical, and social history of the province; after which an investigation of the land tenures was to follow, together with a list of the products of the country, an account of its commercial capabilities, and a report on the means of developing its internal resources. The administration of Warren Hastings, which followed, was characterised by great activity. Surveys were made in every part of the dominions, and isolated documents of great value were left behind. But the next conspicuous period of inquiry was during the years which preceded the Permanent Settlement of 1793, and the consolidation of the Company's rules of business into the Cornwallis Code. Unfortunately, these and the preceding researches remain inedited and unprinted.

The modifications which the Cornwallis Code shortly required, and the Revenue Settlement of the North-west Provinces during the early years of the present century, again forced on the Court of Directors the necessity of a comprehensive investigation, and the instructions drawn up by the Government of India on receipt of the Court's despatch show that the plan was well conceived. An account of each district was to be first prepared, with a notice of its topography, history, and climate. The condition of the people was next considered, the natural productions of the country—animal, vegetable, and mineral—the modes of tillage, implements of husbandry, breeds of cattle, and safeguards against floods. The size of the farms, the rates of wages, and, above all, the land tenures are selected for review, and the list concludes with the arts, manufactures, and commerce of Bengal. No attempt was made to cramp and confine the operations within a specified time, and a man of learning and ability was selected for the work. Yet the net result was that, after seven years, 30,000*l.* are said to have been spent, only a fragment of a single province had been surveyed, and not one page had been printed. The records of this survey form a series of twenty-eight volumes, containing at least 10,000 pages of MS., which practically remained unutilised until 1872.

During the next forty years the work in Bengal seems to have been taken up at intervals by individual investigators such as district officers. The only organised attempt during this period was made between 1836 and 1840 by the Medical Department, twenty-one separate branches of inquiry being laid down. Several of the papers thus obtained, such as (Dr. Taylor) *Dacca* and (Dr. John McCosh) *Assam*, were for many years the standard authorities on the districts of which they treat. This period of isolated efforts may be fitly concluded by the reports of some officers in Eastern Bengal, which were embodied, in 1868, into a volume, entitled *Principal Heads of the History and Statistics of the Dacca Division.*

In the meantime, the Court of Directors, having failed to obtain from the Indian servants any comprehensive account of the territories under their care, had set on foot a distinct series of efforts of their own. They liberally encouraged works bearing on the subject, and as far back as 1828 a fair compilation, under the name of the *East India Gazetteer*, in two volumes, by Walter Hamilton, had reached a second edition. Ten works of this class in all were examined by Dr. Hunter, and comprised such works as *Thornton's Gazetteer*, *Pharaoh's Gazetteer of Southern India*, and *Balfour's Cyclopædia*. *Thornton's Gazetteer of the Territories under the Government of the East India Company and of the Native States on the Continent of India*, appeared in 1854; and though there are a great many grave defects in it, Dr. Hunter expresses his opinion that it has done more than any other work to impart to the English people a knowledge of their Indian dominions, and that it remains to this day one great source from which successive compilers draw, sometimes with scanty acknowledgment, the materials for our modern encyclopædias and gazetteers.

But *Thornton's Gazetteer* had one inherent fault, which was that it was not based on a systematic account of each of the geographical or political divisions of India, compiled district by district, and that, in the absence of systematic materials, the author had to depend upon the chance topography of tourists and historians. He brought great industry to bear on the subject, but the practical result is that while some petty hamlet, in which a traveller had halted a night, or any locality which formed the subject of official correspondence, stands out in bold relief, important features of great districts are passed over without a word. The results being thus less satisfactory than had been hoped, interleaved copies of *Thornton's Gazetteer* were circulated among district officers, who were requested to supply all omissions. It was soon perceived, however, that to conduct a proper revision involved a complete rewriting of the work, for since 1854 a new history had been enacted in India, a new political geography had been formed, and a new system of government had been reared. Perceiving this, the local administrations began to strike out new plans for drawing up a statistical and geographical account of their territories. In March 1862, the Madras Government issued orders for a series of district manuals to be compiled by the local officers, which should exhibit that presidency in minute detail. Similar efforts were made in the Central Provinces and in Bengal, and in October 1867, the local governments were addressed with a view to the extension of the

operations throughout India. It soon however became evident that there being no uniform system and no central supervision, the expenditure might eventually be considerable without the desired results being obtained, especially as regarded securing comparable statistics. The Council of the Asiatic Society forcibly urged this view, which was concurred in by the Government of India; and Dr. Hunter was accordingly directed to make arrangements for the systematic conduct of the future statistical operations, which were designed to extend over a territory of 1,556,836 square miles, inhabited by a population of 240 millions.

The previous operations, from 1807 downwards, had endeavoured to attain *per saltum* a goal which could only be reached by many weary steps; Dr. Hunter's system, on the other hand, consisted in the circulation of a number of *Heads of Information required for the Imperial Gazetteer*, which ensured a fair amount of uniformity of treatment and subject-matter. These materials have been gathered in, almost without cost, by enlisting the unpaid co-operation of district officers and heads of departments throughout India. By appointing a provincial editor in each of the presidencies and provinces, central control has been localised; while the Director-General, by means of regular tours, has been enabled to exercise inspection and secure steady progress and fairly uniform execution of the whole.

By this means provision was made for the statistical survey of the whole of British India, the Native States being alone excepted. The results are briefly as follows: As regards Bengal, which comprises forty-seven districts, the accounts of forty-one have been already compiled, and the compilation of the remainder will be probably completed within six months. Of Assam, which now forms a chief commissionership consisting of twelve districts, about half have been compiled. In these two provinces Dr. Hunter has acted as provincial compiler. In the North-west Provinces Mr. E. J. Atkinson has acted as compiler; here four volumes, comprising thirteen out of the thirty-five districts, have been printed, and the remainder are expected about the beginning of 1878. The Punjab comprises thirty-two districts, of which the accounts have all been printed, and will probably be published within the current year. In Oudh the MS. district account of all the twelve districts has been completed, and the whole is expected to be published next year. The *Gazetteer of the Central Provinces* was published in 1870, before the Census of 1872 had taken place. The more accurate statistics supplied by this will be incorporated into the *Gazetteer* under Dr. Hunter's eye. In Bombay and Sinde, as in the North-west Provinces, the scale of the operations has been magnified, so that the time of completion of the whole of the statistical accounts is a matter of some uncertainty. The *Gazetteer of Sinde*, by Mr. Hughes, however, has been published, comprising five out of the twenty-four districts of the Bombay Presidency. Mr. Campbell is provincial editor as regards the other districts.

In Mysore and Coorg the whole of the materials have been collected from the district officers, and although the checking of these materials has been a laborious task, owing to the imperfect means of communication, still all the four volumes comprising the nine districts will be completed before the end of the year.

The system adopted in Madras dates as far back as 1862. Here each district is done separately and there is no central officer or provincial editor appointed. The preparation of the "District Manuals," as they are termed, thus proceeds but slowly, only five* out of the total twenty-one having been as yet published, in the course of eleven years. Of these the Vizagapatam Manual by the Hon. D. F. Carmichael, is pronounced by Dr. Hunter to be a model of administrative information and local research. But much repetition is involved by the scheme of decentralisation thus adopted, and Dr. Hunter has found it necessary to stipulate for the supply of short digests or abstracts of the outstanding manuals, so as to enable the *Imperial Gazetteer* to be proceeded with without delay.

In British Burmah the operations are somewhat of a tentative character, as many years must elapse before the information here permits of the elaborate completeness of the Statistical Accounts of the older British provinces. But Captain Spearman the provincial editor, has brought great industry and steadiness of purpose to his task, and the volumes embracing the whole of the fifteen districts are expected at no distant date, the MS. having been already completed. Mr. La Touche completed a Statistical Account of Ajmir and Mhairwara in 1874.

Thus of the 233 districts of British India with which the operations deal, the Statistical Accounts of 162 have been already completed, while out of the twelve provinces into which British India is divided, the work in ten is either completed or so far advanced as to hold out a fair prospect of completion within two years.

No provision was made for the survey of Native States, but inasmuch as this was necessary for an Imperial Gazetteer, Dr. Hunter has taken measures for obtaining accounts of those under the local governments, such as the groups of Native States under the Bengal, North-west Provinces, Punjab, Madras, and (more especially) the Bombay Governments. Those under the Foreign Office are more difficult of access, but for these Dr. Hunter purposes to base his accounts on the forthcoming new edition of Aitchison's *Treaties and Engagements*, as amplified and revised in the Calcutta Foreign Office. A collection of administrative reports by the political officers in charge of Native States will also be placed at Dr. Hunter's disposal, and these, combined with other papers in the Foreign Office, will enable a far more complete account of the Native States of India to be given than has, as yet, been attempted. As regards the French and Portuguese possessions, no considerable body of materials has been discovered by Dr. Hunter, in the course of visits to Goa and Pondicherry, but some statistical accounts will be derived from the *Annuaires* and semi-official publications of the respective governments, and some fresh facts from materials in the Calcutta Foreign Office.

The condensation of all these provincial accounts into the *Imperial Gazetteer of India* will in all probability be commenced on the 1st February, 1877. This work will be designed primarily for the use of the controlling body in England; in the second place, for the use of Indian officials; and, thirdly, for the public at large. The general plan will be that of alphabetical arrangement of articles varying from a few lines to about twenty pages in length. The period

* Vizagapatam, Madura, Nellore, Bellari, and Cuddapah.

of time which the preparation of this important work will occupy will probably be four years from February 1877. The great difference between it and *Thornton's Gazetteer* (the only work in any way comparable with it) has been already indicated above; and the elaboration and care bestowed on the preparatory arrangements, as well as the abilities and experience of the editor, afford a guarantee that the execution of the work will be commensurate with its importance.

## SOSNOVSKI'S EXPEDITION THROUGH CHINA AND MONGOLIA, 1874-75.*

THE stoppage of all commerce at Chuguchak and Kulja induced the Russian Government to look to other markets in Central Asia, to which Russian produce might be exported. But, owing to the want of trustworthy information, no serious measures could be taken, and it was resolved, therefore, to charge Y. A. Sosnovski with the mission of exploring the road from Zaisan through Dzungaria, to the Chinese province of Sze-chuan, and to collect information on the present state of the Dungan rebellion, and of its chances of success. The leader of the expedition was accompanied by Dr. Pyasetzki, as surgeon and naturalist; by Matusovski, as topographer; by Andreyevski, as interpreter; Boyarski, as photographer; Syui, a Chinese; and by three Siberian Cossacks as an escort. The members of the mission received fixed pay, and its leader had, moreover, the disposal of a lump sum of 5000 rubels for unforeseen expenses, in addition to which the merchants of Kiakhta granted 3000 rubels and specimens of merchandise, and MM. Ivanof and Radisnof 1000 rubels each.

Peking was made the starting point of the expedition. Travelling by the usual road, by way of Kiakhta, this place was reached on the 19th of August, 1874. Andreyevski and Syui travelled by land to Han-kau, along the road usually followed by the merchants of Shen-si, whilst the other members of the expedition went by sea, *viâ* Tien-tsin and Shanghai. The expedition had been furnished with a khucheu or passport by the Tsan-li-Yamen at Peking, but, looking to the fate that had overtaken Margary, they were reluctant to place much faith in it. The Chinese provincial authorities would certainly distrust the members of the expedition, the objects of which had already been discussed in no friendly spirit in the Chinese papers published at Shanghai; and Sosnovski therefore resolved to state openly that he had been sent by the Russian Government to inquire into the possibility of establishing commercial relations. He paid visits to the Chinese governor and other high officials, and was promised every support, and the protection of a gun-boat during the preliminary stages of his journey.

Han-kau lies at the confluence of Han-kiang and Yang-tse-kiang. The former flows through three of the most important provinces of China—Sze-chuan, Shen-si, and Hu-pe, and the examination of this river formed one of the first tasks of the expedition. In its lower portion it is navigable even for large steamers; the current is slow, the banks are partly low and sandy, partly high and loamy. Cotton plantations, rice-fields, and an unbroken chain of villages and farms, hidden behind willows and beanstalks, were seen, and vessels in large numbers met with. Amongst the more important towns were Ye-kia-kou and Than-yang, which do much business in rice and cotton-paper; Fan-ching, where the Shen-si merchants leave the river when going to Kalgan and Lo-khe-kou, on a navigable river, a town of 60,000 inhabitants, which exchanges the products of the south for those of the north. In its middle course the Han-kiang intersects the Wa-tan-shan, a mountain range abounding in coal and slates, and forms no less than 360 rapids, having a current of as much as 9½ feet per second. Shipwrecks are frequent there, but the traffic is nevertheless considerable; and if Chinese junks, carrying a cargo of 400 cwts., manage to surmount these rapids, a river-steamer may do so likewise. The upper course of the river is not much adapted for navigation, for it is shallow and abounds in sand-banks. Shen-si, Sze-chuan, and Kan-su are remote provinces, which will hardly ever be brought under the influence of foreign commerce. Their chief produce consists in tea, silk (raw and partly manufactured), rhubarb, saffron, tobacco, and fruit. In southern Shen-si and throughout Sze-chuan tea-plantations abound, and the quality in many instances is superior. The nearest tea-markets are Tsy-yan-syan (Ky-yan-hien?) and Han-chung-fu (on the Upper Han). Up to the outbreak of the rebellion much of this tea was exported to Central Asia and Chuguchak, and the famous pinkish sort of Semipalatinsk came from these districts. Prices are low, 205 lbs. of tea may be purchased for three rubels; 40 lbs. of the horse-shoe shaped rhubarb for two rubels; and silk stuffs which cost 75 to 100 rubels at St. Petersburg, are sold for 35 or 40 rubels. Further north the aspect of the country changes, for the loam-slopes are covered with northern foliferous trees, and the valleys are occupied by fields of wheat.

In Shen-si our explorers met many native Christians, whose features struck them as being more pleasant than those of their fellow-countrymen. They had oval features, with straight noses, the eyes only a trifle oblique, and the cheek-bones not very prominent. The inhabitants of Hu-pe, however, exhibited the Chinese type in its most repulsive features. The travellers suffered much from the inquisitiveness of the people. High and low pressed around them, to examine their hands, feet, and limbs, and expressed wonder at their being "put together" in the same manner as themselves. It was mostly the soldiers and villagers who exhibited this *naïveté*; the townsmen rendered themselves unpleasant by pelting our travellers with sand and stones, and the term "foreign devils" was frequently applied to them. A Cossack nearly lost one of his eyes, from a stone thrown at him in the city of Sinan-fu; Sosnovski was told by a Tatar at Fanchen that the Chinese accused the Russians with having intercourse with evil spirits, and that the merchants had a sort of fear that their Russian customers, by casting an eye upon their goods, might draw them towards them. It would have been next to impossible to make purchases under these circumstances, without the aid of a "Comprador." The photographer was the only person on

* *Istvestya Russian Geographical Society*, xii., 1876, pp. 143-155.

the staff of the expedition who was in request. He was frequently asked to dinner, in the hope of his counterfeiting his host.

Sosnovski reached Han-chung-fu about the middle of April. This is a town of 80,000 inhabitants, on the Upper Han, doing a brisk trade in opium, and its merchants are anxious to see the trade with Central Asia and the Russian provinces of Semirechensk and Semipalatinsk reopened. The reception in that town, as well as during the rest of the journey, was cordial in the extreme. Han-chung has played a part during the Taiping rebellion. Many houses are still in ruins from that time, and human bones are found in the streets.

The road from Han-chung to Lan-chau-fu, on the Hoang-ho, led through a mountainous country, abounding in well-cultivated valleys. Tsin-chau, on the Wei-ho, was the first town of importance touched upon. Beyond it rises the Pe-ling of our maps, forming the line of partition between the basins of the Yang-tse-kiang and the Hoang-ho. It rises in two terraces, the northern having an altitude of 7400 feet above the sea-level, and in its valleys the vegetation of the temperate and sub-tropical regions—wheat and rice, pines and palm-trees—meet in a remarkable manner. The road was practicable throughout for camels.

Between Lan-chau-fu and the Gobi the road leads alternately through rich pastures and barren tracts of sand. The snowy Nan-shan rises on the left, its naked outliers, along which winds the "Great Wall," on the right. The country offers a fearful picture of desolation. Large villages have been converted into blood-stained ruins, in which only a few careworn human beings linger. The country has suffered fearfully in consequence of the insurrection; corpses were fed upon, and parents even ate their own children. Order has now been restored, the inhabitants return from their hiding-places in the hills, and an uninterrupted chain of guard-houses and military posts (Lyanse) extends along the road.

Sosnovski stayed a month at Lan-chau-fu, where he was hospitably entertained by Tso-tsum-tan, the governor-general. This official is a man of enlightenment, and knows a good deal about Russia. He first served against the Taipings, then became governor of Fu-kian, and holds his present position as governor-general of Shangan (Shen-si, Kansu, and Kuku-nor) since 1868. He is a good administrator, straightforward and honest. At Lan-chau he has established an arsenal, where breechloaders and mitrailleuses are manufactured according to the latest patterns, and has been the chief instrument in suppressing the rebellion. Since last year he has been entrusted with the government of the whole of the country, as far as Turkistan. He is said to have at his disposal an army of 150,000 men, and proposed to attack Urumchi in December 1875. Captain Sosnovski admits that his troops are far superior to any others that he had seen in China, as to discipline, but considers them a very inferior body of men as far as military training goes.

The reception of the Russian Mission, so far, had been most hospitable. Breakfasts, dinners, and night-quarters were provided, the military and civil authorities presented themselves, the guns of the fortresses saluted, the towns hung out flags and illuminated, and even roads and bridges were repaired, to render their passage easier. The Cossack, Pavlof, was sent from Lan-chau with despatches to Zaisan, a distance of 1500 English miles, which he performed in 50 days.

On leaving Lan-chau-fu (21 July, N.S.), the governor-general provided an escort of military and civil officers, with instructions to facilitate the journey of the Mission, and to render every assistance in their power. If the Russians insisted upon entering districts still in the hands of the rebels, they were to be accompanied by all the troops that were available. Horses and carts were furnished. The start in the morning generally took place with a certain amount of show. The men of the escort formed into line on both sides of the road, the officers being on the wings; three guns were fired, the order of the day was issued, and then they started. This friendly treatment was due altogether to the good-will of the governor-general. China is anything but a centralised empire, and everything depends upon the local authorities. If the governor of a district places difficulties in the way of a traveller, no written complaints will receive attention, and the personal interference of the governor of a province can hardly ever be looked for. The central government, in numerous cases, is almost helpless. A noted pirate had to be appointed Admiral of the Fleet, in order to induce him to give up his *métier*. The celebrated Li-chung-tang was won over from the side of the Taipings by the offer of a high position; he is governor of Chi-li now. The French Expedition succeeded in its objects because it won the favour of the governor of Yun-nan by supplying him with military stores, to be used against the Panthays; and the left bank of the Amur was ceded by the governor-general, and not by the Foreign Office at Peking, which was finally compelled to acquiesce into an established fact. The Russians, moreover, have never been seriously at war with China, whilst the Anglo-French invasion has not yet been forgotten. The opium trade, too, embitters the feelings of the Chinese authorities. Sosnovski, besides this, had promised that the Chinese garrison at Gu-chen should be supplied with provisions from Semipalatinsk.*

About a mile and a half beyond An-si-che (Ngan-si-fan-chau) all vegetation suddenly vanished, and the expedition entered upon the Gobi Desert. The road led over plains covered with stones, or across rocky ridges. Water is found everywhere near the surface, and near it grass and herbage abound. The pastures are sometimes of considerable extent, and afford food for numerous herds of wild horses, asses, and mules. After eight days' journey, Sosnovski reached the fertile oasis of Khami, and on the day after he found himself in the Thian-shan, the gray summits of which had been visible for some time. Khami has always been an important commercial city. Wool, from Turfan, and the products of Turkistan were brought thither from the north, to be exchanged for the productions of Central China. The Muhammadan population of Khami consists of immigrants from Jitishahr, Bukhara, and Samarkand, and of the descendants of the Uigurs. In former times the inhabitants had much intercourse with Turfan, whence they visited the Lob Nor. Their statements with respect to that lake are curious. Its northern shore is inhabited by Dulanes, who are partly Muhammadans, partly Lamaists; the western shore is inhabited by

* The first caravan with corn started in November 1875. It numbered 300 camels.

MAP OF THE
VICTORIA
AND
ALBERT NYANZAS
to illustrate the last discoveries of
H.M.STANLEY.
Scale 1: 3,250,000
E.G.Ravenstein.
VICTORIA NYANZA
UKEREWE (VICTORIA) NYANZA
MWUTAN N'ZIGE (ALBERT NYANZA)
RUANDA
URUNDI
USOGA
UGANDA
KARAGWE
KISHAKKA
MUVARI
UGUFA
USUKUMA
UZINZA
USUI
UKARA
BUMBIREH
NYANZA
Speke Gulf
Kavirondo
Manyara
Lake Tanganyika
Albert N'yanza
Victoria Nyanza

Torguts. The Dulanes occupy permanent dwellings, and their language and customs are the same as those of the inhabitants of Turfan. On an island of the lake a few Khirgiz have maintained themselves. They rear cattle and fish, and occasionally visit Turfan, which is twelve days distant.

The Thian-shan can easily be crossed in carts. It was crossed at a height of 8980 feet above the sea. Barkul is 6700 feet, Khami 3150 feet above the sea-level. From Barkul a convenient road leads by way of Gu-chen, Bulun-tokhoi and along the valley of the Black Irtish to the Russian frontier at Zaisan. Sosnovski, who had left Han-kau on the 23rd of January (N.S.), reached Zaisan on the 26th of October, after having travelled 1900 miles by land and 800 by water.

The road throughout, with the exception of 300 versts, is practicable for carts. It leads through inhabited territories, eight days' journey in the Gobi excepted. As compared with the Kiakhta road, there is a saving of 1600 versts between Tyumen and Han-kau, and of 2800 versts between that place and the tea-districts of Sze-chuan. There are no long days' journeys without water, and caravans starting from Han-chau-fu can proceed to Tyumen without unloading. This route cannot fail to become of the utmost importance as soon as a railway shall have been built as far as Tyumen and steamers shall navigate the Irtish.

As regards the scientific work of the expedition, it may be stated that the position of twelve points was determined by astronomical observations; that complete series of magnetical observations were made at ten places, and the altitudes of numerous points determined by aneroid and hypsometer. About 300 photographs were taken, botanical and zoological specimens were collected, and samples of merchandise procured. Towards the end of its journey the baggage of the expedition required fifty camels to carry it, although much had been forwarded by mail.

## MR. STANLEY'S PROCEEDINGS IN THE LAKE REGION OF CENTRAL AFRICA.

IN our number for December 1875 we gave an account of Mr. Stanley's journey to the southern coast of Lake Victoria Nyanza, and of his exploration of its eastern and northern shores until he reached the capital of M'tesa, the chief of Uganda. On August the 7th, 10th, and 14th, the *Daily Telegraph* has published letters containing an account of his further proceedings down to April 24th, 1876, when he was on his way towards Unyanyembe.

M'tesa supplied him with two canoes, to accompany his boat on the return voyage to Kagehyi, on the south shore of the lake, where he had left the remainder of his followers. After stopping at the mouth of the Kitangule River of Speke, he coasted along the Usongara district, camping at places called Kagya and Makongo; and then got among an archipelago of islands in the south-west corner of the lake, the largest of which, called Bambireh, is cultivated and populous. Stanley approached a cove near a village called Kajuri, on Bambireh Island, and ran his boat on the beach. It was immediately seized by a great crowd of natives, and run up high and dry, amidst hostile cries and gestures. The chief then demanded some cloths and necklaces as the price of permission to depart, but he also caused the oars to be seized, a sign that he intended to demand further payments. The chief and his people then went away to their village; and Stanley's crew launched the boat into the water, using the seats and bottom boards, instead of oars. Some of the natives began to launch their canoes, and Stanley opened a fire upon them from his boat, killing and wounding, according to his own account, not less than fourteen men with ball and buckshot.

He then made sail, and, favoured by a breeze from the shore, he shaped a course to the south-east. The next day the party encountered a fresh gale, and in the evening reached an island where they found a welcome supply of bananas. Two days afterwards they reached the shores of Usukuma, and arrived at the camp at Kagehyi, after an absence of 57 days. In Stanley's absence, one of his two surviving English assistants, named Frederick Barker, and six natives had died. Only one Englishman remained, named Francis Pocock. Soon after his return Stanley received a message from the chief of Uzinza, the district on the south-west side of the lake, to the effect that the travellers would not be allowed to pass through his dominions. Stanley then sent Pocock with a message to the chief of Ukerewe,* requesting the loan of forty canoes to convey the party to Uganda, along the west shore of the lake. The people, however, were unwilling to lend their canoes, and Stanley, with the connivance of the chief, seized them by recourse to treachery, and embarked his party, reaching an island in the neighbourhood of Bambireh.

Stanley then committed an act of barbarity which, so far as appears from his letter, is without any justification. He got together 280 men and 50 muskets, in 18 canoes, and proceeded to the shore of Bambireh Island. As soon as the people came within range of his weapons he fired a volley among them, the result of which was several killed and many wounded. Then hundreds came down to the beach to resist a landing, and, when huddled close together, a deadly fire was opened upon them at close quarters. Forty-two were counted on the field lying dead, and over a hundred were seen to retire wounded. Soon after the perpetration of a deed which we refrain from characterising, but which is calculated to do lasting mischief, a number of canoes joined him from Uganda, which enabled him to convey the whole of his party to a camping-place called Dumo Uganda, about two days' march to the north of the Kitangule River.

M'tesa, the chief of Uganda, then furnished Stanley with 2000 spearmen under a chief named Sambuzi, as an escort across the hostile country of Unyoro to the Lake Albert Nyanza. On January 5th, 1876, they entered Unyoro, the people flying before them, and leaving their provisions behind in their haste to escape, which Stanley and his Waganda friends appropriated to their own use. The march was in a west and north-west direction; and on the 9th they encamped at the base of a mountain which Stanley calls Kabuga (the Kaboya of Baker). To the eastward the River *Katonga* was flowing towards Lake

* See map in our number for December 1875.

Victoria; and to the westward the Rusango River dashed over a rocky course, with many rapids and cataracts, westward to the Albert Nyanza. Beyond the Kaboya mountain was seen a peak called Gamboragaré, which is reported to be 13,000 to 15,000 feet above the sea, and on which snow is frequently seen. The people on this mountain are said to have European complexions. The peak itself appears, from the accounts given of it, to be an extinct volcano. But these hearsay reports, imperfectly understood, are of little value. The party, after leaving the base of Kaboya, followed the course of the River Rusango, on its southern bank, winding in and out among the mountains, until they reached a district of Unyoro called Kitagwenda, which was well populated and cultivated. The people fled at their approach, and by the 9th of January, they were within 3 miles due west of the Albert Nyanza. On the 11th they advanced within one mile of the edge of a plateau, a thousand feet below which was the lake; and on the 13th they set out on their return, without attempting to embark. The people were naturally hostile on seeing an invading armed force enter their country, and it seems clear that piratical violence is not the best way of exploring Africa. How much slaughter was committed is uncertain, but we read of the inhabitants being dispersed by rounds of ball cartridge; and on the 18th the party re-entered Uganda. By this excursion the courses of the Katonga and Rusango Rivers were ascertained, as well as the position of the water-parting between the two lakes, in this direction.

Mr. Stanley also collected some information respecting the shores of the Albert Nyanza. He reached the lake at a point where a deep gulf is formed by a promontory called Usongara, which runs out for about 30 miles in a south-west direction. The eastern shore of this gulf is formed by districts of Unyoro called Irangara, Unyampaka, Buhuju, and Mpororo, and there are some islands called Utumbi. Opposite the promontory, on the west coast of the lake, is Ukonju, said to be peopled by cannibals, north of which is the great country of Ulegga. The country on the south coast of the lake is called Ruanda. Unyoro occupies the whole of the east coast from the Murchison Falls to Ruanda. The Usongara promontory is the great source of the supply of salt for the surrounding countries. Mr. Stanley gives the position of his camp near the Albert Nyanza at 31° 24′ 30″ E. longitude by observation, and 0° 25′ 0″ N. latitude by dead reckoning, the promontory of Usongara bearing due west about 15 miles. On re-entering the territory of Uganda, Stanley's party did not return towards M'tesa's capital, but marched south to the banks of the Kitangule River of Speke, and entered the country of Karagwe.

Stanley reached the capital of Rumanika, the chief of Karagwe, and the old friend of Speke and Grant, by whom he was informed that the people of Mpororo and Ruanda, on the south and west of the Albert Nyanza, were very hostile; and he, therefore, abandoned all attempts to explore that lake from the countries between it and the Victoria Nyanza. He, however, received assistance from Rumanika in examining the western portion of Karagwe. His boat was conveyed to the small lake discovered by Speke, and named Windermere by that officer, which he circumnavigated, and then entered the River Kitangule of Speke (Stanley calls it *Kagera*) which flows through it. Speke, on his map, gives two tributaries to the Kitangule, called Luchuro and Ingezi. Stanley says *Luchuro* means "higher up," and is not the name of a stream; and that *Ingezi* is the word used for the lagoons and reed-covered water connecting the *rwerus* or open expanses. Lake Windermere of Speke is one of these *rwerus*. The details which Mr. Stanley supplies respecting the Kitangule River, the main feeder of the Victoria Nyanza from the west, are of geographical importance. Near its mouth he found this river to be 14 fathoms deep, and 120 yards wide. Lake Windermere had an average depth of 6½ fathoms; and the river, on leaving this lake, is 50 feet wide and 8½ fathoms deep. Stanley continued his voyage on the river, for a distance of three days above Lake Windermere, where he came to another lake about 9 miles long and a mile wide, on the right hand of the stream. After working his way through two miles of reeds, Stanley came to an island in the lake called Unyamubi, a mile and a half long. The vegetation covered a large portion of this long shallow lake about 14 feet deep, 80 miles long, and averaging 10 miles in width. The surplus waters of the river flowing through it are discharged into lagoons to the right and left. But Mr. Stanley was travelling during the rainy season, and all these swamps and lagoons are probably the flooding of a river which, in the dry season, presents a very different appearance. Karagwe occupies the eastern shore of the River Kitangule or Kagera, and to the west are Ruanda, Mpororo, and Kishakka. The region to the north-east is called Ankori; and at the point where Karagwe faces Ankori, the river dashes over rocks, and finally falls over a wall of rock 10 to 12 feet high, called *Morongo* or "the noisy fall."

On his return from this trip, Stanley obtained guides from Rumanika to visit some hot springs called Mlagata, which are renowned for their healing properties. They are two days' march to the north of Rumanika's capital, in a wooded country, near the Morongo Fall, and the waters of the hottest springs, issuing from the base of a rocky hill, were at a temperature of 129° Fahr.

On the 27th of March Stanley left Rumanika's with his party, intending to trace the River Kitangule (or Kagera) to its source, by following its right bank. On the 6th day, marching along the eastern shore of the flooded river, they came to Ubimba, on the frontier of Karagwe. Here they saw a lake called the Akenyara, entering the Kitangule (Kagera of Stanley) from the north-west, and above the confluence the Kitangule was a rapid stream of no great size. The Akenyara is given on Speke's map. The people on the banks of the Akenyara were reported to have large herds of cattle, of the safety of which they were very jealous, and to resist the entrance of strangers. Stanley, therefore, abandoned all attempts at exploration in this direction.

Mr. Stanley then marched southwards on Speke's route, and his last letter, dated April 24th, 1876, is dated from Ubagwe, a place on Speke's map, on his route from Unyanyembe. His intention was to proceed to Ujiji, explore Lake Tanganyika in his boat, and then endeavour to strike north towards the Albert Nyanza.

The details sent home by Mr. Stanley in these

# R. GESSI'S SURVEY
of the
# ALBERT NYANZA
from the Maps published by the
**Egyptian General Staff**
(General Stone.)

Scale 1:1,000,000
0 5 10 15 20 25 Miles

R. Gessi's Track.

30° 31° 32°
3° 2° 1°

Dufli
Buckhut
Mt Rupid
Burrum
1350'
Mt Dongola 1500'
1000'
700' to 800'
Magn.
LANGO
Swamp
Odrua
200 yds wide
Mt Auria
Waddai
LANGO
Victoria Nile
Murchison Falls
Magungo
Mt Maccorly 1000
900 to 1000 feet above Lake
12 April
Reeds
13 April
450 to 700 feet above Lake
Magnetic
14 April
Huima Falls
Wahamba Falls
Kisa
Nanza Falls
13 April
1500
Port Shubra (Vacovia)
800 to 1200 feet above Lake
Falls
19 April
18 April
Ambatch Forest
Missisi
Viomba Falls
WANDO
Dianva Mts
Mt Agif 1500

ALBERT NYANZA

E.G. Ravenstein.

letters are of geographical importance. But we trust there will be no repetition of such acts as the slaughter of the people at Bambireh. Knowledge is dearly bought at the cost of piratical proceedings of this nature.

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### NOTE ON THE MAPS.

Our Map of Gessi's Explorations is copied from two maps lithographed at the office of the Egyptian General Staff, and kindly forwarded to us by General Stone. We have allowed the details of these maps, which are evidently based upon very rough surveys, to remain as they are given by M. Gessi, but have adjusted that of the Bahr el Jebel to the positions of Dufli (Dufile) and Magungo, as given on Dr. Schweinfurth's map of Linant de Bellefond's journey (*Bulletin de la Société Khédiviale de Géographie*, No. 1, 1876), and that of the lake to the positions of Magungo and of Vacovia, which latter Gessi places in lat. 1° 15′ N., long. 30° 50′ E., or very nearly in the same position as Baker, supposing the two places to be identical. The southern extremity of the lake does not agree at all with Gessi's published account of his expedition. He states the distance from Vacovia to the mouth of the River Missisi, which he ascended for 7 miles, to amount to 50 geographical miles, it being only 28 * on the map.

On our general map we have adopted the former of these distances, and we imagine that Stanley must have reached the lake somewhere near this river, although his Beatrice Gulf has no analogue on Gessi's map of the lake. It may be venturesome to identify Stanley's *Unyampaka* and Kitag*wenda* with Gessi's Niomba and Wando (Uando)—indeed, the latter appears to be identical with Ruanda rather—but for the present, and until a more satisfactory survey of the lake shall have been made, this must remain a problem still to be solved. We may remark here that the dimensions of the lake, as laid down upon our general map, agree very nearly with Baker's original map, now exhibited in the Kensington Museum, though not with the expanded delineation of the map published in the Society's *Journal*. Several of the places visited by Stanley during his journey to the lake have been heard of before. Mount Kabuga is no doubt the Kaboya in one of Baker's itineraries, and Tambuki turns out to be the name of the king of Ankori (Nkole or Ukore), whilst Utumbi figures upon our old map to the south of the Albert Nyanza.

The results of Stanley's ascent of the Kagera are clearly delineated upon the map, and we may observe that he places Ufumbiro Peaks in the position given to them by Colonel Grant, which is to the north of that assigned to them on Speke's map.

As regards our delineation of the western shores of the Victoria Nyanza (*Geographical Magazine*, December 1875), we adhere to it in spite of the subsequent publication of a map of that lake in the *Proceedings of the Royal Geographical Society*, in which Colonel Grant's observations profess to have been embodied. We had not the advantage of being able to consult Colonel Grant's route survey, but we carefully consulted the bearings published by him in the *Journal of the Royal Geographical Society*, vol. 42, and either the route as laid down upon the map referred to is wrong or the bearings are. There is only one other alternative, viz., that of Speke's map being so faulty as to render it impossible to lay Colonel Grant's route down upon it correctly.

The latitudes and longitudes of places between Faliko and Ullegalla are different on Long's map: as also the shape of Lake Ibrahim Pasha. In this map Karchison Falls are 35 miles further East and in Gessi's map 9 miles East in Long's map.

* There are other discrepancies between Gessi's map and account. In the latter the lake is said to be 141 miles in length and 80 in width, but on the map the length is 170 miles, the width 52 miles.

## THE SEA-LEVEL.

### II.

AT the present moment three-quarters of this globe are covered by water, all of which is liable to certain cosmical laws. We all see the tides flowing on and ebbing from our coasts. Most of us have heard of ocean currents, and some have read Maury, Rennell, and Jordan regarding them. Very little attention has, however, been paid to the cosmical labours of this never-resting force; we have not thought of what it does in its varied conditions. We may divide the current system into surface and bottom currents, these may be subdivided into main currents, eddies, backwaters, and whirls, caused by the conditions of the opposing coasts, or of the bed on which they rest.

The surface currents generally run from the equator to the poles, the bottom currents run from the poles to the equator. Mr. C. Wyville Thomson in *Good Words*, 1874, p. 552, tells of a current between the parallels of 4° and 8° N. lat., "tolerably constant to the eastward," supposed to be caused "by the rapid removal of surface water to the westward." Wherever there is water it is liable to be acted on by the atmosphere, currents and waves are formed, so that the ocean has two forces due to the winds, and two forces, currents and tides, due to cosmical laws, all of which vary as to strength in different regions, while varying constantly in the same. These forces are called aqueous agencies.

Mr. Page tells us in his *Text Book*: "The general tendency of aqueous agency, whether operating as rivers, tides, waves or ocean currents, is to wear down the higher portions of the earth's crust."

If, then, these forces have been working from the beginning, as we can show that they are working now, we establish the fact that the sea-bed must have been worn away during many millions of years.

The accompanying table taken from the 'Challenger' reports of deep-sea soundings, as printed by the Admiralty, exhibits all the facts we require. These, with a few extracts from the text of the reports, will, we hope, enable us to make such deductions as to set before the world that, as the ocean-bed has for ever been worn away, its waters must have sunk, and its surface level must have been lowered:—

*Abstract of Soundings from the 'Challenger' Reports.*

| Section. | Nature of Bottom. | No. of Soundings. | Depth in Fathoms Min. | Max. |
|---|---|---|---|---|
| Gibraltar to Teneriffe. | Mud ... ... ... | 14 | 620 to | 2250 |
| | Mud sand ... ... | 7 | 490 ,, | 2125 |
| | Red clay.. ... ... | 10 | 2740 ,, | 3024 |
| | Coral sand shells ... | 1 | 78 | — |
| | Coral ... ... ... | 1 | 670 | — |
| | Sand ... ... ... | | 1340 | — |
| | Rock ... .. ... | | 179 ,, | 2021 |

| Section. | Nature of Bottom. | No. of Soundings. | Depth in Fathoms. Min. | Max. |
|---|---|---|---|---|
| Teneriffe to Bermuda. | Grey ooze ... ... | 7 | 950 ,, | 3875 |
| | Coral mud ... ... | 6 | 120 ,, | 2450 |
| | Coral shells ... ... | 1 | 435 | — |
| | Coral ... ... ... | 1 | 30 | — |
| | Red clay.. ... ... | 3 | 2600 ,, | 2850 |
| | Sand ... ... ... | 3 | 175 ,, | 1370 |
| | Rock ... ... ... | 3 | 125 ,, | 780 |
| Bermuda to New York. | Grey ooze ... ... | 5 | 1700 ,, | 2650 |
| | Sand mud ... ... | 3 | 124 ,, | 1300 |
| | Rock ... ... ... | 1 | 51 | — |
| Halifax to Bermuda. | Grey ooze ... ... | 6 | 1250 ,, | 2800 |
| | Mud ... ... ... | 2 | 1250 ,, | 1575 |
| | Grey clay ... ... | 2 | 1075 ,, | 1325 |
| | Stones and gravel... | 1 | 83 | — |
| | Rock ... ... ... | 1 | 1775 | — |
| Bermuda, Azores, Madeira, and Cape Verd. | Grey ooze ... ... | 12 | 1150 ,, | 2850 |
| | Globegirina ooze ... | 18 | 900 ,, | 2400 |
| | Mud ... ... ... | 2 | 1000 ,, | 1070 |
| | Volcanic sand mud | 2 | 465 ,, | 1125 |
| | Rock ... .. ... | 12 | 1675 ,, | 750 |
| Cape Verd, St. Paul's, and Fernando Noronha. | Grey ooze ... ... | 3 | 2275 ,, | 2500 |
| | Globegirina ... ... | 10 | 1750 ,, | 2675 |
| | Mud ... ... ... | 2 | 2475 ,, | 2500 |
| | Rock ... ... ... | 1 | 1010 | — |
| Noronha to Bahia and Cape of Good Hope. | Globegirina ooze ... | 6 | 1900 ,, | 2275 |
| | Mud of varied colour | 21 | 250 ,, | 2650 |
| | Shells ... ... ... | 1 | 1000 | — |
| | Sand coral ... ... | 2 | 32 ,, | 120 |
| | Rock ... ... ... | 3 | 820 ,, | 2100 |
| Cape of Good Hope to Melbourne. | Globegirina ooze ... | 7 | 600 ,, | 2150 |
| | Diatom ooze... ... | 2 | 1260 ,, | 1950 |
| | Mud ... ... ... | 4 | 1300 ,, | 1975 |
| | Red clay manganese | 1 | 2600 | — |
| | Sand shells ... ... | 2 | 98 ,, | 150 |
| | Gravel ... ... ... | 1 | 150 | — |
| | Rock ... ... ... | 2 | 210 ,, | 550 |
| Sydney, New Zealand, Fiji, and Raine Island. | Grey ooze ... ... | 13 | 150 ,, | 2275 |
| | Globegirina ooze ... | 4 | 400 ,, | 1975 |
| | Shells ... ... ... | 2 | 85 ,, | 135 |
| | Coral ... ... ... | 3 | 240 ,, | 315 |
| | Red clay rock ... | 10 | 130*,, | 2900 |
| | Hard sand ... ... | 3 | 120 ,, | 290 |
| | Rock ... ... ... | 4 | 130 ,, | 630 |
| Torres Straits China Sea. | Grey ooze ... ... | 3 | 1050 ,, | 2550 |
| | Mud ... ... ... | 3 | 580 ,, | 800 |
| | Red clay ... ... | 4 | 2100 ,, | 2800 |
| | Rock ... ... ... | 1 | 825 | — |
| Philippine Isds., Sulu and Celebes Seas, to China. | Mud ... ... ... | 5 | 84 ,, | 700 |
| | Grey ooze ... ... | 3 | 2000 ,, | 2325 |
| | Globegirina ooze ... | 6 | 500 ,, | 2000 |
| | Red clay ... ... | 12 | 2050 ,, | 4575 |

NOTE.—Every change in the bottom denotes a correlative of material to the force which deposited it. The soundings from England to Gibraltar are not given.

There are then 262 soundings, divided into mud, 53; ooze of sorts, broken up shells, 104; coral mud and coral, 10; coral sand and shells, 9; shells, 3; volcanic sand and mud, 2; red clay, 40; grey clay, 2; mud and sand, 10; sand, 7; stones and gravel, 1; rock, 21 = 262.

From these figures we make the following natural deductions in three parts:—

1st.—The rocks could not be bare unless there were forces to keep them so. Stones and gravel must have been broken and deposited by force. Sand could not be made or deposited without force. Mud and sand together give evidence of organic dust mixing with heavier matter under the influence of variable forces. Red clay has been separated from other matter by water forces, and left to sink by its own gravity. Gray clay is due to similar action. Volcanic sand and mud exhibit a grinding up, and deposit by force. Shells are brought together by surface, middle, and bottom forces. Coral sand and shells tell of forces acting on varied material. Coral mud is produced by decomposition, assisted by force. Coral, entire, tells of recent formation or recent removal. Globegirina and other ooze tell of decomposition and separation by force. Mud tells of decomposed matter of all sorts, deposited in still water.

2nd.—As all these actions are done under cosmical laws, it follows that the same laws, acting from the beginning on the varied material submitted to their sway, placed these materials in the horizontal positions noticed by Sir Charles Lyell, and exhibited to us in our sea-shore cliffs, in the mountain precipices, all round the world, in our mines, quarries, wells, and tunnels, as well as in all the gorges and canons excavated by river forces.

3rd.—Under the action of forces working on the water-bed, it will be obvious that this bed must have worn away. When this happened, and when there was no material at hand to fill up the place, it follows that the water sunk into it under the law of gravitation. As there was a time when this was doing all round the globe, this sinking of the bottom must have caused the sinking of the surface.

These deductions will be more clearly shown in the sequel.

To enable us to record as large an area of the present sea-bed as possible, we now quote from the *Geographical Magazine* for October 1875, the recent soundings of the 'Valorous,' in Davis Straits and in an unknown portion of the North Atlantic. In latitude 64° 5′ N., longitude 56° 47′ W., at a depth of 410 fathoms, molluscs were found. Coming down the Straits, 1170 fathoms gave foraminifera, 1750 fathoms gave the remains of globegirina and other organisms. In the Atlantic between 58° 14′ N., 46° 29′ W., and 35° 10′ N., 25° 58′ W., at depths varying from 690 to 1860 fathoms, the rod on the dredge brought up globegirina ooze, stones, exquisite silicious sponges, brachiopods, foraminifera, black volcanic stones, echinoderms, annelids, and mud in seven soundings or dredgings. The 690 fathoms here mentioned tell of a ridge "about 400 miles S.E. of Cape Farewell;" stones brought up were sharp and angular, "not water-worn as would have been the case if they had been conveyed any considerable distance by a current." We presume that, whether carried there by ice or broken off the sea-bed, they tell of a force of some kind in the ocean.

Returning to the labours of the 'Challenger,' Capt. Nares, remarking on the section between Sandy Hook and Bermuda, writes, paragraph 6: "The dredge indicated that various deposits were going on at different times; this would naturally be caused by an occasional change in the direction of the bottom currents," or we may say to varied materials in the currents. At paragraph 12, an example is given of a surface current "rushing past us like a mill-race." In his report of 16th March, 1873, paragraph 7: "The rocky nature of the bottom . . . . would indicate a considerable movement of the lower stratum of water."

We have then direct evidence of bottom currents from the pen of Captain Nares, and proofs of them in the varied natures of the sea-beds as shown by the 'Valorous' and the 'Challenger.' We continue the history of the sea-bottom from letters of Mr. C. Wyville Thomson, from the 'Challenger,' to *Good Words*. These give ocular evidence of the materials brought up, and the very condition of the ocean forces by which they were deposited.

A sediment of red clay, "in the finest possible state of subdivision," was found over vast areas in the Atlantic. We do not touch on the interesting subject of its composition, but says Wyville Thomson, p. 46: "When the globegirina ooze and the red clay passed into one another, it seemed as if on one side of an ideal line the red clay gradually contained more and more of the material of the calcareous ooze, while on

* The shallowest red clay, most likely under the protection of some projection in the rock.

the other the ooze was mixed with an increasing proportion of the red clay."

He then tells us, that the "mid Atlantic . . . . swarms with pelagic mollusca . . . . that the shells of these are constantly mixed with the globegirina ooze . . . . but not a trace of them is ever brought up . . . . in the red clay area." Allowing that Mr. Wyville Thomson is right in his theory as to the cause of these deposits, it is obvious that these surface pelagic shells had a vast depth to travel through before they reached a resting place; as all dead organisms resolve into their respective elements in course of time, it follows that these shells often become decomposed in transit. All the shells that fall entire, or broken up, on to the ooze formations were carried there by the currents which graduated the mixtures of ooze and red clay. As the clay, however fine it may be, is heavier in proportion than a minute calcareous atom, and as a large calcareous atom is more liable to the water forces, it follows that these forces place the calcareous atoms on areas different from the clay areas. Though a current must exist at the level where these gradations of material are found, it does not follow that any current exists on the lower level where this finely triturated clay is chiefly deposited, so that Wyville Thomson is right when he says: "The idea of a current sufficiently strong to sweep them away is negatived by the extreme fineness of the formation which is taking place." We have noted in our table an instance of red clay, bracketed with rock, at a depth of only 130 fathoms, while it is generally found at great depths. The presence of red clay in this position indicates a current over an uneven bed; the lightest materials take advantage of all projections that offer the chance of a resting-place. In his address to the Geological Society, as published in the *Mail* of 21st February, 1876, Mr. Evans remarked that the 'Challenger' had found "no less than five absolutely distinct kinds of sea-bottom." Considering the variety of materials entrusted to the care of the deep waters, it is almost wonderful that greater changes are not found; but we must remember that triturated remains of primeval rocks mix with the remains of rocks of all ages, and with all the dusts from the uncounted organisms of sand and water, that water has the power to assort all heterogeneous mixtures into comparatively homogeneous masses, and to deposit in their respective places all the atoms under its control.

Our geological schools have avoided water subjects for many years with a pertinacity that savours much of scholastic hydrophobia: we are rejoiced to find in what follows certain symptoms of a speedy cure.

Mr. Wyville Thomson writing in the above-quoted letter on the red clay formations, supposing them to be derived from organic matter, says: "It is impossible to avoid associating such a formation with the fine, smooth homogeneous clays and schists."

Mr. Evans, in the address above alluded to, said: "We have this important discovery laid before us, that there are existing causes at work, which at a great distance from land, and without the aid of any transported sediment arising from denudation, suffice for the tranquil deposit of beds of red clay on the bottom of a deep sea, these beds shading off under different circumstances into deposits closely resembling our lower and upper chalk and upper greensand formations. It will be for geologists to determine whether not only these rocks, but others of older date, but especially clays and slates, may not have their origin assigned to the action of similar causes." On this we remark that when land denudations are handed over to ocean currents, there is no knowing how far they may go.

Professor Huxley lecturing on the work of the 'Challenger,' as reported by the *Hour*, 1st February, 1875, told his audience that, "Ehrenberg had been for fifteen or sixteen years advocating the theory, that chalk was the same as modern deposits." It is of no consequence to our subject as to what the deposits of to-day are composed of; their formation proves the fact of their constituents having been submitted to the forces of water or wind; the coral sands of Bermuda could not envelope large areas of cultivated lands, unless they were correlative to the forces acting on them, that is all the atoms obeyed the winds blowing them from the reefs to lodge them there. The sand-dunes of Holland owe their formations to the relative forces of the winds that blew them there; even mud-banks, sand-beaches, pebble and shingle coasts, are all correlatives to the forces that brought and left them there. We have analogies to these actions constantly before our eyes. The dust that floats and dances in the sunbeam glancing through our rooms is, in its respective actions, correlative to the force that acts upon it. The fleecy vapours that steam away into the blue atmosphere from the heavier clouds are obedient to a force acting on them. The snow-wreaths that are heaped up in vast volumes by the winds are analogous to the vast drifts of unstratified sands, gravels, and muds heaped up by water forces when laden with matter. Thus we reach the facts that all atoms, deposited by wind or by water, must have been brought there by forces relative to the atoms deposited; the heavier the atom, the greater the force; while bare rocks tell of the greatest forces that suffer no atoms to rest upon them. Passing downwards through the groups, systems, and epochs which geological science has classified for our guidance, we find all of them full of evidence of these facts; we find bare rocks, or rather rocks that once were bare; boulders with their unstratified tails below them, pebbles, gravels, coarse and fine, sands, clays, calcareous and argillaceous deposits, all evidences of varied materials subjected to varied forces at varied times—all proving that forces similar to those now existing must have existed in all time.

By slow but certain steps we descend through recent formations into strata full of relics of organic structures, the history of whose existence in life or growth is utterly lost; passing on we come to rocks formed from organisms that can only be detected by the microscope. Below these we reach silicious rocks in which no organisms have been detected. Similar rocks form our ocean-beds, we find them below and on the water level; our rivers find them and erode them; they are found in our mountain tunnels and on our highest mountain tops. From the highest to the lowest locality of this earth we find these silicious rocks of varied character in stratified and unstratified conditions.

How did these rocks get there, and from whence did their materials come?

Before organic dusts covered the water-bed, the

cosmical currents, the wind currents, tides, waves, eddies, and whirls, all applied their unbridled forces to wear away their own beds, as they wear them away now when they find the opportunity, to move along the biting sands and gnawing gravels, over the ever-yielding rocks, breaking all that could be broken to the smallest size, liquefying all that could be liquefied, and moving on solutions, suspensions, rolling atoms, and movable masses, until the gravitation of each individual overcame the relative force opposed to it, and sunk to rest all in their respective places.

The materials for the silicious rocks came then from the sea-bed, and were brought to their resting-places by the water forces, as surely as the mud-banks of to-day are lodged by the same forces from the soft materials submitted to their care.

It seems, then, that these actions are due to certain cosmical laws that must be coeval with the elements, that under their labours the bed on which the waters first rested must have been made deeper, and the surface-level must have sunk. No one can say where that level once was; our highest mountains tell of its presence at 28,000 feet above its present site, and our geologists tell of vast denudations from higher regions. There is nothing against this theory in the laws of nature, but we may here say with the Psalmist: "He founded it upon the seas, and prepared it on the floods, and His footsteps are not known."

Are we now in a position to solve the difficulty of geologists, as expressed by Mr. Jukes? His "shell of water, ten or twenty thousand feet deep enveloping the whole globe," now envelopes some three-quarters of it to an extreme depth, as far as yet discovered, of about 27,450 feet. We cannot say there has been any loss of water, but there has been a certain gain of dry land.

The great cosmical system, which we have endeavoured thus briefly to describe, seems to have nearly reached its equilibrium. We hear of the sea receding from one place, and encroaching on another. The direction of ocean-bottom currents must change, as rivers change their channels; but, whenever they do so, organic matter now fills up the depth, and organic matter is met for a time wherever the currents move to.

May we now thank the Government of Great Britain for the assistance given by the 'Challenger,' her officers, and scientific gentlemen, as well as to the 'Valorous' and her officers, for the facts and discoveries laid before the world. If the problem of the sinking of the sea-level is solved, the solution is due to them. We lay down no dogma, we try to adhere to the cosmical law, and to mark the actions of its agents. The agency we have followed is and has been competent to the work we have assigned to it. The agency employed by our geological school, to produce the same effect, seems wanting in its foundation. When this foundation is secured we will gladly reconsider the case, till then we adhere to the sinking of the water-level as due to the erosion of the water-bed, and leave the case in confidence before the jury of our country.

H. P. MALET.

ERRATA.

Page 216, col. 2, line 30, *for* 500, *read* 58.
" 218, " 1, " 1, " 1000, " 10,000.
" 225, " 1, " 6 from bottom, *for* "to Kino, on the road travelled last year by Lozerowski's," *read* "to China, on the road travelled last year by Sosnovski's."

# Reviews.

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## MONGOLIA.*

MR. E. DELMAR MORGAN has done good service in translating Lieut.-Col. Prejevalsky's deeply interesting narrative of his journeys in Mongolia and Northern Tibet. Colonel Yule has, besides notes, furnished Mr. Morgan with a chapter of introductory remarks which is in fact a valuable review, such as no one but the learned and accomplished editor of Marco Polo could produce.

Lieutenant-Colonel, then Captain, Prejevalsky left the Russian territory at Kiakhta with his companion, Mr. Pyltseff, in November 1870, and proceeded in a Chinese cart, drawn by a camel, to Peking, a distance of 1000 miles; following the ordinary caravan track along which the mails from Kiakhta to Peking are forwarded four times a month. They travelled slowly, and had ample time to study the natural history of the Gobi. One characteristic animal, the Lagomys Ogotono is called by Mr. Morgan *Alpine hare*, but it would seem to be much more akin to the marmot. This little creature collects hay in the summer, carefully dries it, and makes it into little stacks weighing from 4 to 5 or even 10 lbs., placed at the entrance of its burrow.

The rebellion of the Chinese Muhammadans, whom he calls Dungans, appears to have delayed Prejevalsky's projected journey to the Koko-nor; he therefore made a preliminary expedition from Peking to Dolon-nor and the salt lake of Dalai-nor, and returning to Kalgan, which he had already seen on his way to Peking, made his final arrangements for his travels south. Endowed with energy, courage, perseverance, experience, and bodily strength, two causes constantly hindered the success of his undertaking: 1st, His contempt for the people among whom he travelled, and 2nd, Want of means. It does seem strange that a traveller sent out by the Imperial Geographical Society of St. Petersburgh, with the co-operation of the Minister for War, should have been baffled by want of money; but we find that England is not the only country whose government can be reproached with parsimony in helping forward scientific objects. In his first journey, Prejevalsky had to return when only 400 miles from the Koko-nor, having only 20*l.* left; and in his second he had to give up visiting Lhasa, when only 27 days' journey from it, and still worse to abandon the mysterious Lob-nor, with its system of inland drainage, though there was no difficulty in getting there. No one who reads Prejevalsky's travels can fail to perceive the disadvantage his contempt of the Chinese and Mongols was to him; he has not a good word to say for them, and constantly expatiates on their vices and filthiness, though one might well think a Russian was hardly the person to complain of this last failing; he must already have seen something of it in his own country. According to Prejevalsky, the first thing that strikes the traveller in the life of the Mongol is

* *Mongolia, the Tangut Country, and the Solitudes of Northern Tibet*, being a narrative of three years' travel in Eastern High Asia. By Lieutenant-Colonel N. Prejevalsky. Translated by E. Delmar Morgan, F.R.G.S. With Introduction and Notes by Colonel Henry Yule, C.B. In 2 vols. London (Sampson Low, Marston, Searle and Rivington), 1876.

his excessive dirtiness. His gluttony exceeds all description. The most striking trait in his character is sloth. He is a slave to habit, and a coward; superstitious, hypocritical, and a thief. The Chinese are as bad, and both are inveterate cheats.

In their journey from Kalgan to Koko-nor, Prejevalsky and his party traversed the same line of country as the missionaries Huc and Gabet. At a place called El-shi-siang-fu they fell in with Samdadchiemba who fills so large a space in Huc's delightful narrative. Colonel Yule, in his introductory remarks, defends Huc against Prejevalsky's suspicions of his veracity; and some apparently startling statements of Huc's may be explained by his utterly unscientific nature. What may be called an undesigned coincidence between Huc and Prejevalsky goes far to prove the accuracy of the former. In China only unleavened bread is used. Huc mentions some excellent leavened loaves in Kansu, near the town of Sa-yang-chen; not far from this, at Ta-jing, Prejevalsky, on his second journey, met with bread, of which he says: "Here we found a very rare thing—some excellent bread, baked with yeast. This was the first of the kind we had seen, and we never afterwards saw any more of it." At Ding-hu they crossed the Yellow River, 1400 feet wide, and entered the mountain district of Ala-shan, unvisited, we believe, by any European since the time of Marco Polo. This was the extreme point of the first journey. Want of money forced Prejevalsky to retrace his steps to Kalgan, which he reached January 12, 1872, after undergoing severe hardships on the way; the cold was intense, the thermometer at sunrise fell to − 26° Fahr. in the very place where, in the summer, they had registered 98° Fahr., and this suffering was increased by the difficulty of obtaining fuel—*argols* were sometimes neither to be found nor bought.

"When a fire was lighted inside our tent the warmth was sufficient at all events for that part of the body which was immediately turned towards the hearth; but the smoke irritated the eyes, and when aggravated by dust became almost unbearable. In winter the steam from the open soup kettle completely filled our tent, reminding us of a Russian bath, only that of course the temperature was very different. Boiled meat became quite cold before we had time to eat it, and the hands and mouth were covered with a layer of grease which had to be scraped off with a knife. And in the stearine candle that lighted us at supper-time, the part close to the wick would burn down so low that we had from time to time to break off the outer shell, which remained unaffected by the flame."

In the following May our travellers again set out, and this time succeeded in reaching the Koko-nor. The most remarkable discovery of this journey was the moist mountain district, with a rich and varied vegetation, in Kansu, to the east of the Koko-nor. Here the first European since Marco Polo, Prejevalsky, beheld the medicinal rhubarb (*Rheum palmatum*) growing wild! After a digression into this region they resumed the road to the Koko-nor, and on the 24th of October, 1872, "stood in triumph on the shores of the great lake, and gazed with admiration on its beautiful dark-blue waves."

From the Koko-nor the way was open to them to Lhasa. A Tibetan envoy, a most obliging and amiable man, paid Prejevalsky a visit, told him that the Dalai-Lama would be glad to receive Russians, offered his services, and assured him that they would be well received. No traveller before had such a chance—how long will it be before another such is offered? Alas! the shortness of his purse, which contained but 27*l.* 10*s.*, forced Prejevalsky to decline the proposal of the envoy. Although obliged to give up all hopes of seeing Lhasa, Prejevalsky determined to advance as far as possible, and, having obtained two guides, proceeded to explore the basin of the Koko-nor, and the Tsaidam region to the south of it. The plain of Tsaidam is covered with morasses, thickly impregnated with salt, and is said to stretch as far as the Lob-nor.

Prejevalsky was assured by the natives that Lob-nor was only a month's journey—*i. e.*, 500 or 600 miles—from the westernmost point which he reached in Tsaidam. Guides were to be had there to take a traveller as far at least as Gast, whence there was no difficulty in getting to Lob-nor. The interest of such an exploration, both geographically and zoologically, would be immense, but it could not be thought of—lack of means again stood in their way. Prejevalsky, however, proceeded to the lofty and uninhabited region of North Tibet, studying the wild animals which abound there. Returning to Koko-nor in the middle of March 1873, he found the lake entirely frozen over. He remained there and in Kansu till the middle of June, and on the 9th of that month snow fell to the depth of a foot. Their funds were now entirely exhausted, and Prejevalsky formed the bold resolve of returning to Urga by the direct route from Ala-shan across the Gobi. At Din-yuan-ing they found a remittance from the Russian Ambassador at Peking. The journey across the Gobi occupied from July 26 to September 17, and their sufferings from heat and drought were extreme. At noon the thermometer rose to 113° Fahr. in the shade, and the soil was heated to 145° Fahr. and even higher where the sands were entirely bare. Their tent was no protection, for it was hotter within than without. Prejevalsky's favourite dog, Faust, the companion of all his wanderings, died of thirst, and he himself narrowly escaped the same fate.

During all his travels, Prejevalsky was a diligent observer both of the animals and plants of these regions—more so than of their human inhabitants. We have mentioned his strong prejudice against the Mongols, and we learn but little from him respecting the religion of Lamaism. The results of his labours are however most important, and honourable to him, and are thus summed up by Colonel Yule:—

"Their toil had extended over three years, during which they had travelled upwards of 7000 miles, of which they had laid down about half in routes surveyed for the first time, and accompanied by very numerous observations for altitude by the aneroid first, and afterwards by boiling point. The route surveys were checked by eighteen determinations of latitude; and a meteorological record was kept throughout the journey. The plants collected amounted to 5000 specimens, representing upwards of 500 species, of which a fifth are new. But especially important was the booty in zoology—which is Prejevalsky's own specialty—for this included thirty-seven large and ninety smaller mammals; 1000 specimens of birds, embracing 300 species; 80 specimens of reptiles and fish; and 3500 insects. The journey and its acquisitions form a remarkable example of resolution and persistence amid long-continued toil, hardship, and difficulty of every kind, of which Russia may well be proud."

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MACLEAN'S GUIDE TO BOMBAY. Compiled and printed at the *Bombay Gazette* Steam Press, 1875.

MR. MACLEAN has succeeded in producing an excellent guide book, full of accurate and well-digested information, in a most convenient form. The first part is devoted to the geography and history of the Presidency,

to the population, the trade and industry, the government and revenue, a description of the city of Bombay, and of native festivals, and lastly there is a chapter on excursions from Bombay, including the caves of Elephanta and Karli, Mahabaleshwur, Matteran, Bassein, and the Vehar Lake. The second part contains a civil, military, and mercantile directory.

The historical portion is particularly well written; as it required no slight literary skill to condense such a mass of material into so small a compass, and yet maintain the interest of the narrative. This has been successfully done. The account of the trade and industry of Bombay also forms a most valuable chapter, containing full details respecting the rise and present condition of the cotton manufacturing industry. *Maclean's Guide* will henceforward be the standard guide-book for Bombay, and no doubt improvements will be introduced into future editions. The present edition contains a map of Bombay reduced from Colonel Laughton's admirable survey, and a map of India coloured according to political divisions, and showing lines of railways, telegraphs, and dawh routes.

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THE ANDES AND THE AMAZON: OR, ACROSS THE CONTINENT OF SOUTH AMERICA, by *James Orton, A.M., Professor of Natural History in Vassor College, Poughkeepsie, N.Y.* (New York, 1876.)

IN our number for February, 1874 (p. 474), we gave some account of Professor Orton's two journeys in South America. In the first, in 1867, he landed at Guayaquil, went thence to Quito, and down the Napo and Amazon to Para. In the second, in 1873, he went up the Amazon to Yurimaquas, thence by Caxamerca to Pacasmayu on the Pacific coast, whence he visited Lima, Arequipa, and the shores of Lake Titicaca. The present volume is composed of a reprint of articles from the New York *Evening Post*, which are pleasantly written. There are also some useful chapters on the woods and other vegetable products of the Valley of the Amazons, and on its geological structure.

Several examples occur in this volume of the slowness with which geographical knowledge is distributed through the world, an evil which it is one great object of the *Geographical Magazine* to remedy. For instance, the admirable and complete survey of the River Purus by Mr. Chandless was published in the *Journal of the Royal Geographical Society* some years ago, yet Professor Orton still thinks that the Purus rises in the Andes, and is identical with the Amaru-mayu of the Yncas.

Professor Orton has now undertaken a third scientific journey to South America, and we look forward to its results with much interest.

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DIE HUNDERTJAEHRIGE REPUBLIK, von *Johann H. Becker*. Augsburg, 1876. (London, Trübner.)

WE are afraid Herr Becker's contribution to the centennial celebration of the American Republic will not prove a very acceptable gift. The author thinks that the advantages of the United States are very much overrated in Europe, and more especially in Germany, and believes he is doing a service to his countrymen by placing before them a plain and unvarnished account of the social and political condition of this Republic, in order to prove to them that republican institutions cannot, after all, compare with the monarchies of Europe. His picture does not redound very much to the credit of the States. There can be no doubt that his account is truthful, as far as truth lies on the surface. Who can doubt that political corruption is rife in the States, and that there is much room for improvement in other respects? But might not the same be said of other countries? That the professional politicians of the United States are a corrupt class can hardly be denied, but it would be wrong to conclude from this that this corruption extends to a large portion of the public. Dollar-hunting and money-making are pastimes not quite unknown on this side of the Atlantic; and if the educational institutions of America do not deserve the praise which is sometimes lavished upon them, the same might be said of the schools in the author's own country, or there could not occur such lamentable instances of ignorance and credulity as are offered by the periodical exhibition of the Holy Coat at Treves, or the assembly of thousands near some miracle-working image of the Virgin, who have to be dispersed at the point of the bayonet. At the same time, there is much in this book which is deserving attention, more particularly on the part of the Americans themselves. They have heard the same thing, no doubt, from their own newspapers, but this is very different from being told such hard truths by a foreigner. We do not for a moment suppose that the publication of a translation of this work in America would endanger the liberty of the American publishers. Very different would be the case if a book of similar tendencies were to be translated into German.

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OBSHCHIÏ OCHERK OROGRAFII VOSTOCHNOÏ SIBERI. St. Petersburg.

OROGRAFICHESKIÏ OCHERK MINUSINSKAGS I KRASNOYARSKAGO OKRUGA. St. Petersburg.

M. P. KROPOTKIN has done well to reproduce in a separate shape these valuable contributions to the orography of Siberia, which appeared first in the *Journal of the Russian Geographical Society*. The first of these papers treats on the general orography of Eastern Siberia, and is accompanied by a large coloured map and a number of diagrams. On the map are distinguished low plains, low hilly districts, and three elevated or mountain regions, including an "Alpine one," a name which we consider not to be applicable to many of the mountains embraced within it. The author also indicates the direction of the mountain ranges, which exhibit remarkable examples of parallelism and of divergence, as well as the deeply cut river valleys. The second paper is illustrated by a contoured map of the districts of Minusinsk and Krasnoyarsk in the government of Yeniseisk.

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RUSSISCHE REVUE, herausgegeben von *C. Röttger*. St. Petersburg. (London, Trübner.)

THE first six numbers of the *Russian Review* for the present year contain a large number of highly interesting articles on the social and political condition of the Russian Empire and on its history. There are, as usual, several articles of especial interest to geographers. Bogdanof renders a lucid account of the exploration of the Aralo-Caspian basin since 1720, with particular reference to Natural History, whilst Dr. E. Schmidt completes his valuable account of the Khivan Expedition of 1874, placing us in possession of the principal facts ascertained by the course of it. Dr. O. Struve contributes a paper on Russian Cartography during the reign of Peter the Great, and Professor Grigorief enlightens us on the policy pursued by Russia in Central Asia. There are also papers on the Law Reform of 1864, on Russian Communes and the abolition of serfdom, on Russian Finance, &c.; and a large number of shorter articles. The editor exhibits great judgment in the selection of his contributors, and of their contributions, and has succeeded in producing a periodical which must prove welcome to all interested in Russian affairs.

# Log Book.

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**Cameron's Services.**—The great geographical services of the only traveller who ever crossed tropical Africa from east to west, have received fitting recognition. Cameron has been created a Companion of the Order of the Bath, and has been promoted to the rank of Commander in the Navy. The narrative of his travels, which will form the most important and interesting work on African geography that has appeared for many years, is now approaching completion. It will be published by Messrs. Daldy and Isbester.

**Norwegian North Atlantic Expedition.**—This expedition, the arrangements for which we announced in our number for August 1875, has been doing excellent work during the summer, under the superintendence of Professor Mohn and Professor Sars. The steamer left Christiansund on the 27th of June, and went westward. Soundings and dredgings, in 230 fathoms, off the Island of Storeggen, yielded most interesting results. The animal life all belonged to the "warm region," but further west, in 418 fathoms, the thermometer showed an icy cold sheet of water, sharply divided from the upper warm sheet. On the 2nd of July there was a gale of wind continuing until the 4th, and on the 5th soundings were taken at a depth of 1050 fathoms. Another gale of wind came on which obliged the steamer to go to Thorshaven in the Färöe Islands, where she arrived on July 8th, and remained until the 14th. The expedition then proceeded to Iceland, reaching Reikiavik on the 26th.

**Dar Fur.**—On the 30th of April, Ismail Pasha Ayub, the conqueror of Dar Fur, returned to Khartum, after an absence of two years, accompanied by 1000 soldiers, amongst whom were 800 Furani. His reception was enthusiastic in the extreme. The town was brilliantly illuminated, and entertainment followed entertainment. The Pasha estimates the population of Dar Fur at 3,000,000. The administration of the new province has now been organised. It is divided into four Mudiries, viz., Umshanga, on the eastern frontier, towards Kordofan; Fasher, in the centre; Dara, in the south, and Kabkabia, in the west. The country is stated to be exceedingly fertile. Wheat, durrah, dokhn, simsim, beans, ful, tobacco, melons, &c., are cultivated. There is no lack of water, although in certain localities it has to be fetched from a distance of two leagues. Horses, cattle, sheep, camels, and game abound. A postal service has been arranged, and letters from Fasher reach Khartum in ten days, a most remarkable speed, considering the distance. There is no want of forests. The present garrison of the province numbers 10,000 men, including irregulars. Hasan Pasha Helmi, the new governor-general, resides at Fasher. The exploration of the country is being carried on by two expeditions organised by the Egyptian General Staff, commanded by Colonel Purdy and Major Prout. Convoys arrive almost daily at Khartum from Dar Fur and the Shilluk country, with prisoners of war or recruits, and the garrison of Khartum now numbers 3000 men. (Colonel Hansal in the *Mittheilungen of the Vienna Geographical Society*. vol. xix., p. 371.)

**Introduction of Caoutchouc Cultivation into India.**—In our number for February 1876 (pp. 31—34) we gave an account of the steps that have been taken for the introduction of the cultivation of caoutchouc-yielding trees into British India. Since then great progress has been made. It has been arranged that nurseries shall be formed at the Peradenia Gardens in Ceylon, under the able management of Mr. Thwaites, and at Singapore, whence plantations in India will eventually be stocked. Mr. H. A. Wickham, the adventurous traveller whose work we reviewed in our number for November 1872 (p. 243), was engaged to collect seeds of the *Hevea* genus in the Amazon valley, as we announced in our number for February 1876 (p. 33). Last June he arrived in England with a large supply of *Hevea* seeds, which germinated freely at Kew, and a great number of plants was thus secured. On August 12th an instalment of thirty-eight Wardian cases full of *Hevea* plants, and one full of *Castilloas*, were despatched to Peradenia. Mr. Duthie, the new Superintendent of the Saharanpúr Gardens, will take out a second instalment in September. Major Seaton, the Conservator of Forests for British Burma, will also take out a supply of plants to Rangoon. This important and interesting experiment is thus fairly started; and there is every prospect of successful results.

**Barometrical Heights in Mongolia.**—The following altitudes were determined by M. Paderin in 1873, during his journey from Urga to Uliasutai, and thence to Usin. They have been computed by Dr. Fritsche:—

| | English Feet. |
|---|---|
| Urga ... ... ... ... ... ... | 3773 |
| Sharakhun (1st camp) ... ... ... ... | 3983 |
| Boro Khundu (5th camp) ... ... ... | 2648 |
| Ulan Bumba (9th camp) ... ... ... | 2677 |
| Ulan Khoshu (12th camp) ... ... ... | 3527 |
| Khuchirtu (15th camp) ... ... ... | 4839 |
| Ulan Chilu (source of Chilutu) ... ... | 6070 |
| Khobol (source of Tara usu) ... ... ... | 6611 |
| Khuchirtu (27th camp, west of Buyantugol) ... | 6151 |
| Ukha-shorotu (31st camp) .. ... .. | 5511 |
| Uliasutai ... ... ... ... ... | 4642 |
| Khuduk daba, summit ... ... ... | 4659 |
| Source of Narin (35 versts from Uliasutai) ... | 6135 |
| Yamatu Mountains, Pass ... ... ... | 6070 |
| Gol modo daba, Pass beyond... ... ... | 6316 |
| Khergen Chilu, station... ... ... ... | 6316 |
| Ubur Ulakchin, station ... ... ... | 5955 |
| Azdrin, station, at foot of a low range ... | 5250 |
| River Tamtarkhai ... ... ... ... | 4920 |
| Dzur, basin-shaped valley ... ... ... | 3248 |
| River Tes, near Tsagan tologoi ... ... | 2936 |
| Bukhanor daba... ... ... ... ... | 3773 |
| Yersen, station ... ... ... ... ... | 3034 |
| Tsagan ula ... ... ... ... ... | 3280 |
| Tannu-Khair Khan ula ... ... ... | 4068 |
| Samagaltai, station, in Tannu Mountains .. | 3904 |
| Pass over a branch of Tannu Mountains ... | 3970 |
| Ulan Mashaluk, station ... ... ... | 2493 |
| Confluence of the two Yenisei ... ... | 1739 |
| Nukun Daban Mountains ... ... ... | 2690 |
| Ruk Gol, near Russian Frontier ... ... | 1968 |

—(*Istv. Russian Geographical Society*, xii., 1876, p. 134.)

**Father Desideri's Tibetan Journal.**—In our number for January 1876 we made reference to the discovery of the journal of the Jesuit missionary, Father Ippolito Desideri, during his residence in India and Tibet. We perceive now, from a note by Signor C. Puini in the *Bollettino degli Studii Orientali*, Nos. 2 and 3, that the arrangements for the publication of the work are already matured, a capable

editor having been secured. Signor Puini remarks that the MS. is evidently a copy, being written with great clearness and without any corrections. It consists of 650 small folio pages, twelve of which contain a brief digest, entitled *Breve e succinto ragguaglio del viaggio alle Indie orientali del P. Ippolito Desideri della Compagnia di Gesù*. Father Hippolytus started from Rome on the 7th of September, 1712, and embarked on a Portuguese vessel for Goa, where he arrived on the 27th of September of the following year. He visited successively Bassein, Damaun, Surat, Delhi, Guzerat, and Kashmir. It was on the 17th of May, 1715, that he left Kashmir for First Tibet, as he calls Baltistan and Lhata-yul or Ladak. Thence he visited Treshiis-kang, which is the limit of Second Tibet, and after traversing a deserted region, finally arrived at the first inhabited districts in Third Tibet, about the 4th of January, 1716. On the 18th of March he entered Lhasa. During the next four years he laboured at the mission, studied a great number of Tibetan works, and wrote some treatises in the vernacular, for the purpose of imparting a knowledge of Christianity to the king and his court. In January 1721 he received orders from Rome to leave the Tibetan mission, and after sojourning for some time at Kuti, he left that place for Katmandu in January 1722, after which he visited Patna, Benares, Allahabad, Agra, and Delhi, and, embarking at Calcutta, sailed to Pondicherry and thence to the Malabar coast. It was not till the 4th of November, 1727, that he finally returned to his native town of Pistoia. The above forms briefly his itinerary. Regarding his journey to and sojourn in Tibet, to which interest naturally reverts, he observes that the Second Tibet is called in Hindustani and Persian Tibet-Kalam and Bara or Great Tibet, and in the vernacular Lhata-yul. He describes the country of Ngari Jonkar, and his visit to the grotto of Urghien, the founder of the Tibetan religion. When at Lhasa he openly gave out that he was a foreign lama, come thither to convert the people. He stated that he was received with much toleration, and that the king was so much struck with a pamphlet of his, that he arranged for a religious discussion to take place between him and some great lamas. A revolution, however, intervened, the king was assassinated, and the discussion fell through. In consequence of these *émeutes* Desideri repaired to Takpokhier, eight days' journey distant. When at this place he received instructions to return home, and it was in reply thereto that he addressed a long protest to the Pope.

In the second part of the work he gives a description of the kingdom of Tibet, of its people and their customs, and of the products of the country, and he furnishes an important historical summary of the chief events up to the date of his arrival. He then proceeds to describe the country more minutely, the mode of government, religion, and social condition of the people. After alluding in terms of great horror to the practice of polyandry, he concludes this part of the work with a detailed notice of various religious notions and customs.

Signor Puini concludes his notice of Desideri's MS. with some regrets that the Jesuit father had not endeavoured to devote more attention to the literature and less to the religion of Tibet, and so have contributed to a knowledge of a field of research in which Csoma de Koros, with much fewer advantages, laboured so effectively many years later.

# Correspondence.

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## BAKER'S "CLOUDS IN THE EAST."

*To the Editor of the* "GEOGRAPHICAL MAGAZINE."

SIR,—Perhaps you will allow me to say that your critique of "Clouds in the East," in the June number of the *Geographical Magazine* hardly does justice, in my humble opinion, to the value of Baker and Gill's geographical explorations in North-Eastern Persia. Your critic says that "their travels contain records that may be useful to geographers." I can testify that they *have* been useful. When the travellers returned from Persia, I was engaged in compiling, at the India Office, the map of that country which, I learn from your pages, is being honoured by exhibition at the South Kensington Museum. Lieutenant Gill's valuable manuscript routes from Mashad to Kalát, and thence to Darehgaz, were at once placed at my disposal, and enabled me to delineate a portion of the country, I believe, wholly unknown save by report. Your critic speaks of Kalat-i-Nadiri as hitherto but rarely visited by Europeans. I am anxious to learn who these rare visitors were: Fraser, Lemm, Burnes, and Khanikoff (I place them in chronological order) are the only travellers in Northern Khúrasán of whom record, to my knowledge, exists, and none of them visited Kalát. At all events, before 1875 that place had two local habitations on our maps; one north of Mashad, and a second, far away to the east, expunged for the first time, on Lieutenant Gill's authority, in the latest edition of Colonel Walker's Central Asian maps.

In all maps that I have seen before Lieutenant Gill's, Darehgaz is laid down (if at all) as a town or village, but was found to be an extensive and flourishing district, extending to the foot of the hills, forming a separate government, and containing no town or village of the same name. But here the discoveries in political far exceeded in importance those in topographical geography. To the author belongs the merit of discovering that a large portion of the Atak is under the actual dominion of Persia, instead of being solely inhabited, as all authorities agreed in supposing, by independent Turkman tribes. This, apart from the Atrak question, showed that Russia cannot march troops from the Caspian to Merv, without violating *de facto* Persian territory. As regards the Atrak itself, your critic does not, I venture to assert, do the author justice. He is right in stating the most recent maps to be grossly incorrect; Kiepert's map of Turkistan, on which the Russian maps are founded, *did* then show the Atrak under the name of the Monah rising *east* of Abirard and Darehgaz; and Mr. Arrowsmith (*vide* his map in Sir H. Rawlinson's *England and Russia in the East*) knew only so much the better that he transferred the name Monah to the southern branch, omitting the northern branch (the Shirin Chai) and Darehgaz itself altogether. To Baker and Gill is due the credit of showing that the Atrak, instead of having numerous affluents from both banks, receives all its tributaries from the north, and that the transfer to Russia of the Citra-Atrak territory would involve the loss to Persia of a large tract of country actually in her possession.

It must be admitted that the spelling in "Clouds in the East" is far below the standard of the Asiatic Society, but one of your critic's instances of misspelling is hardly felicitous. The village that Burnes calls "Baumein." and Baker Boomahoo is really, I give you the orthodox transliteration, Búmahann or Búmahanh. Putting aside the likelihood of a printer's error in the last two letters, I think it will be admitted that the hussar made at least as good a shot at the word as the political.

The travellers' quarrels in Mazandarán are possibly made too much of; but an Englishman was murdered

for the sake of his baggage in that same country no later than 1862-3.

In conclusion, permit me to remark that what your critic considers to be the only important fact recorded for the first time, namely, the height of the mountains at whose skirt the Atak lies, is really nothing new. Lemm (1829) fixed the height of Kabúshan at 4183 feet, and Fraser and, I think, Burnes speak of the lofty snow-clad hills rising above that town to the north. Under these circumstances it would naturally be inferred by any one acquainted with the geography of Persia that the hills in question were over 8000 feet. The first knowledge of the extent and direction of the range to the north-east is due not to Baker and Gill, but to the Russians under Markosoff. Your critic again misquotes the map. The height of the pass to Kalat-i-Nadiri is given as 7600 feet, that of the neighbouring village of Wardeh being 6300 feet.

As a parting shot, may I ask your critic, for whom "no sort of mystery hangs" over the salt desert of Khúrasán, to be good enough to lift the veil in your columns. For my part, after long research, I was unable to find that it had really been seen or traversed by any European save a Russian doctor, whose name I forget. He travelled, if I remember rightly, from Damghán to Yazd, but made no survey, and recorded little of his journey save the names of halting-places—that he crossed one salt-marsh a few miles wide, that he saw date-palms, and heard of oases where they bear fruit. The salt-plains seen from the Tehran Mashad road would appear from Claude Clerk's journey to be merely isolated patches, or places where winter torrents overflow on a saline soil and cause efflorescence.

Yours, &c., O. ST. JOHN.

MAYO COLLEGE, AJMERE, *11th July*.

# Proceedings of Geographical Societies.

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## PARIS GEOGRAPHICAL SOCIETY.

*July 19th*, 1876.—M. MALTE BRUN in the chair. The President announced that the Council had resolved to open a national subscription in favour of an exploration of the Ahaggar country, one of the least-known portions of the Sahara, which would be entrusted to M. Largeau, who had already proved himself to be in possession of the qualities required by an explorer.

Mr. WALKER said that he was about to return to the Gabun, and should be glad to keep the Society informed of his progress.

M. HAYAUX DU TILLY, in a letter addressed to the President, claims on behalf of the brothers Poncet and of Dr. Peney the honour of having made the discoveries recently reported upon by Colonel Gordon. In 1868 the former had stated that the Iaie or Bahr Jemit was an effluent of the Luta Nziga, that it flowed through Lake Jak, and joined the Nile on the right bank of the Bahr Zaraf, which was a continuation of it; whilst Dr. Peney, in 1863, had stated that the Nile and the Iaie bifurcated near the Gmri Pek, at the extremity of the Rego Mountains. He doubted the geographical hypotheses put forward by Colonel Gordon, and especially the existence of a region of swamps between the Albert Nyanza and the Tanganyika, and the connection of the Welle with the Nile.

M. QUATREFAGES read a letter from M. A. Pinard, which contained some information on the tumuli discovered on Vancouver Island.

Mr. MACGUIRE gave an account of the fauna and flora of Australia, and of the mineral resources of the British colonies.

Colonel FRANCESCO DE COELLO was introduced to the Meeting by the President, who referred to the valuable maps of Spain prepared by the Colonel, and to his connection with the Spanish Geographical Society. The latter already numbered 600 members, and amongst the subjects discussed by it was that of the initial meridian. The Society suggested that Ferro should be retained, but that a meridian should be drawn 20° 30′ (instead of 20°) to the west of Paris. The President also read a letter from M. Ujfalvy, who was about to proceed on a scientific mission to Asia, in August next.

M. DELESSE said that M. Lechatelier, the engineer who had accompanied M. Roudaire on his expedition to the Shotts of Southern Algeria, was of opinion that they never had had any connection with the sea, and that he agreed with him. The only reasons for assuming that they had been were their depression below the sea-level, and the layer of salt which covered them. The latter, however, by no means proved the existence of an ancient sea, and the salt of the Shotts, which had been analysed with great care, certainly was not deposited in an ocean. Its composition was very variable, and it frequently contained more sulphate of sodium than common salt. No fossils had been discovered in these Shotts which could prove that they communicated with the sea at any time. Only a single bivalve shell had been discovered, and that of a species living in brackish water.

M. QUATREFAGES said that the absence of marine shells was not decisive, for it appeared from the later researches of M. Roudaire that this inland sea communicated with the Mediterranean only through a narrow strait, and was fed by numerous rivers, now dried up, which caused its waters to be brackish.

Baron AVRIL communicated the details of Gessi's examination of the Albert Nyanza.

*August 2nd*, 1876.—M. MALTE BRUN in the chair. The President communicated some interesting details of the life of Pierre Desceliers, a priest of Arques, near Dieppe, born in the fifteenth century, and who devoted his leisure to mathematical and geographical studies. There are still in existence two maps of the world compiled by him, one dated 1550, the other 1553. The latter was exhibited at Paris, the other is the property of Cristoforo Negri. Desceliers was the first Frenchman who published a large planisphere of the world, twenty years before the appearance of that by Mercator.

M. MAUNOIR, the secretary, then read the letters which had been received. The Geographical Society of Rumania forwards its first Bulletin. The Society of Arts and Science, at Bayonne, draws attention to the importance of deep-sea explorations. They published a periodical *Les Fonds de la Mer*, specially devoted to that subject, and of which several volumes had appeared since 1867. France had hitherto taken no share in these explorations, but 1200*l*. had been raised at Marseilles and would be devoted to that object, and the Society hoped that other cities would follow this good example.

The Secretary read a letter received from M. de Brazza, written at Lope, in Okanda, on the 22nd of April, 1876. The expedition was doing well; Dr. Ballay had arrived with a fresh supply of merchandise, and at the end of the rainy season he proposed to start for the countries of the Aduma and Ossyebo. The Okanda appeared to be determined now to open themselves a passage through the country of the Ossyebo. He had, however, paid a visit to an influential chief of the Ossyebo (Fam-Make), residing beyond the Ofué, and had induced him to come to Lope. He trusted, therefore, that he would be able to penetrate into the interior without being obliged to appeal to his friends, the Okanda.

Lieutenant WYSE announced to the Society that the Government of Columbia had granted to a company, represented by General Türr, the privilege of constructing a ship-canal through the Isthmus of Darien. A body of surveyors would leave in November, in order to make

the final surveys, and he trusted the enterprise would meet with the support of the International Committee recently formed under the presidency of M. de Lesseps.

M. LEON DROUILLET announced that he was about to proceed to America, and would use his best efforts to establish there a sub-committe for the scientific exploration of the American isthmus. Their committee intended to study this question without prejudice, for, in spite of this new concession, our information was as yet very far from being complete.

M. HAYAUX DU TILLY read a paper on the ivory trade. England alone imported annually 1,200,000 lbs. of ivory, and to obtain this quantity it was necessary to kill annually 30,000 elephants, and the ivory supply of the whole world probably caused the destruction of 100,000 elephants annually, and, as females and males were killed indiscriminately, this animal would soon become extinct.

M. LARGEAU read a paper on his last journey to Ghadames.

Dr. HAMY read a paper on the ethnological results of Dr. Hamard's exploration of Cochin China, and M. de QUATREFAGES drew attention to the importance of that explorer's archæological and geographical discoveries.

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## BERLIN GEOGRAPHICAL SOCIETY.

*March 11th*, 1876.—Dr. HARTMANN in the chair. The Chairman stated that the felicitations of the Society on the occasion of Professor Dove's jubilee had been conveyed through a deputation, consisting of Dr. Nachtigal, Dr. Neumayer, and himself; their President, Baron Richthofen, having been prevented attending in consequence of the death of his brother. Dr. Neumayer had been entertained at dinner by the Society, previous to his departure from Berlin for Hamburg, where he was about to assume the duties of Director of the Naval Observatory. He introduced Count Béla Szechényi, who proposed to penetrate to the south of Lop Nor and to explore the northern slopes of the Kuen Luen.

Dr. H. KIEPERT gave an account of Cameron's journey across Africa.

Dr. REIN read a paper on his journey from Tokio to Kioto in Japan, in the course of which he enlarged upon the hydrographical and orographical features of the Province Shinano.

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*April 8th*.—Baron RICHTHOFEN in the chair. The delegates of the African Society were present at the Meeting. The President announced that a donation of 1500*l*. had been received by the African Society from the Emperor, and that the Prussian Ministry of Instruction had granted 75*l*. to be devoted to scientific purposes.

He then exhibited to the Meeting the copy of a portulano presented to the Society by Mr. F. Spitzer. This portulano had been compiled in 1539, probably by a native of Majorca, for the use of the son of Charles V., subsequently Philip II.

Lieutenant REGELY submitted to the Meeting a heliotypical reproduction of Professor Julius Schmidt's Map of the Moon, upon which he had been engaged for thirty-five years. This map is about to be published at Berlin, in twenty-five sheets.

Herr CARL MOHR, selected by the African Society to continue the labours of Cameron and of Lieutenant Lux, then explained his plan of travel.

Dr. HARTMANN read a paper on the zoological collections made by the members of the West African Expedition. They were exceedingly rich, and contained many new species.

Mr. MEYER, Assistant Engineer of the American Palestine Exploration Society, read a paper on an expedition into Eastern Syria, in 1875. The members of the expedition—Colonel J. C. Lane, Professor S. B. Mercill, H. Treat, and himself—had landed at Beirut on the 9th of August, and accompanied by Dr. Lewis, a geologist, they left for the interior on the 2nd of September. After an extended journey to the east of the Jordan, they returned by way of Jerusalem to the coast. The actual surveys were to be begun in September of the present year, when a base would be measured on the plain of Bosra. Colonel Lane estimated that the survey would occupy three years, and cost 25,000 dollars annually.

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*May 6th*.—Baron RICHTHOFEN in the chair. The President read a paper on "Ocean Routes to China in Ancient Times and during the Middle Ages." He distinguished five periods. (1) Gradual extension of navigation from Western Asia, during the second half of the first century of our era, as far as Kattigara, which he identified with Kiau-chi (Kecho) near the mouth of the Song-koi in Tongking. (2) Extension of the Chinese navigation to the west, since 350 A.D., first to Pinang, then to Ceylon, and, in the fifth century, to Hira, on the Euphrates, and perhaps to Aden. Chinese vessels continued to visit Persia and Mesopotamia until 700 A.D., and Ceylon until the middle of the eighth century. (3) The period of Arab and Persian navigation, extending to Canton (700-795) and the Khan-fu, near Hang-chau-fu, up to 878. The furthest land known then was Sila, *i.e.* Corea. Since 878 the direct communication by sea between Persia, Arabia, and India, on the one hand, and China on the other, were discontinued. (4) Between the latter half of the thirteenth century and the year 1450, Chinese vessels from Zaytun frequent the coasts as far as Ceylon and Malabar, whilst only a few vessels proceeded to China from the East. (5) In 1517, commencement of European intercourse by sea with China. The author identified Kattigara with Kecho in Tongking, Kantu with Kiau-chou, and Sila with Southern Corea.

Dr. KIEPERT objected to the identification of some of the places mentioned by ancient geographers, and particularly by Ptolemy, and said that a paper, which he had prepared, on that subject would be published shortly in the *Transactions of the Berlin Academy*.

Dr. RICHTHOFEN replied that in identifying Kattigara and other places, he had been guided more particularly by Chinese authorities, who, he thought, had not been considered sufficiently in our interpretation of ancient geographers.

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## ITALIAN GEOGRAPHICAL SOCIETY.

*July 8th*, 1876 (*Extraordinary Meeting*).—Signor CORTE, formerly Italian Consul at Monte Video, proposed that a scientific and commercial excursion should be organised to the banks of the La Plata, as well as an exploratory expedition to Patagonia. He traced the history of exploration in these districts down to the present day, and said there still remained much to be done. To Italians, in particular, many of whom had settled on the La Plata, an expedition of the kind proposed ought to commend itself.

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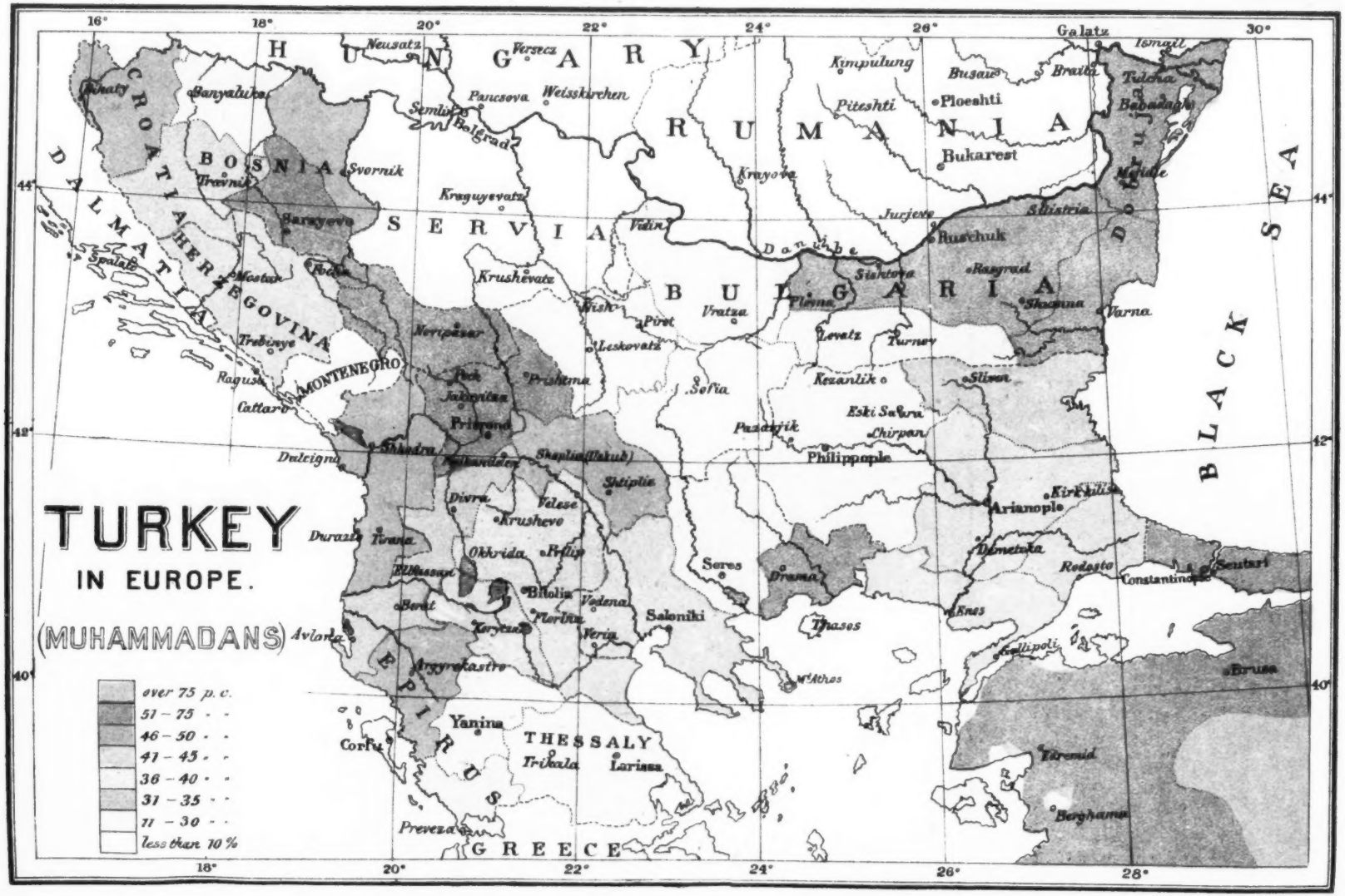
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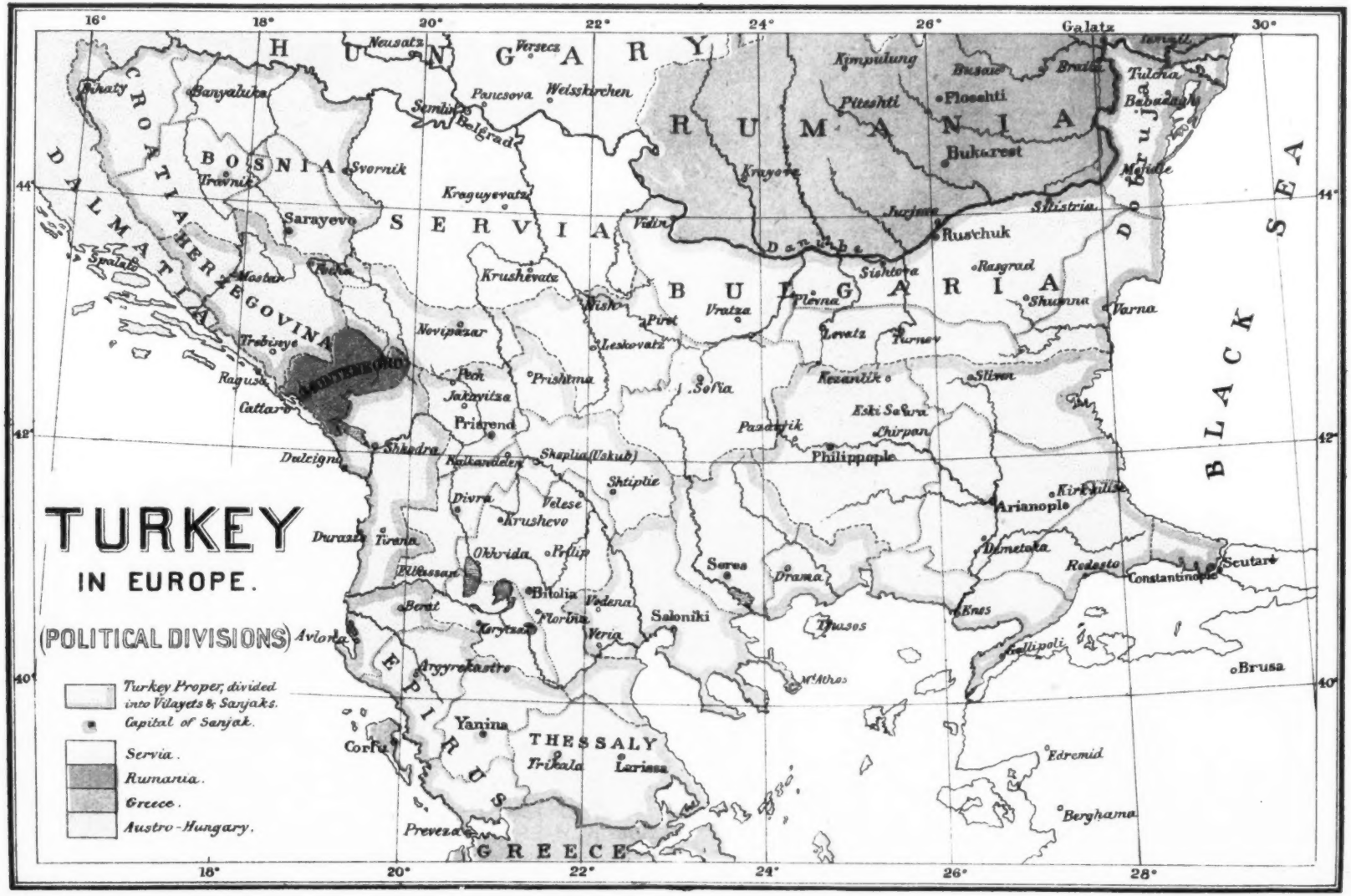
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Rumania.
Greece.
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HUNGARY
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Mostar
Trebinye
Ragusa
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Scutari
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